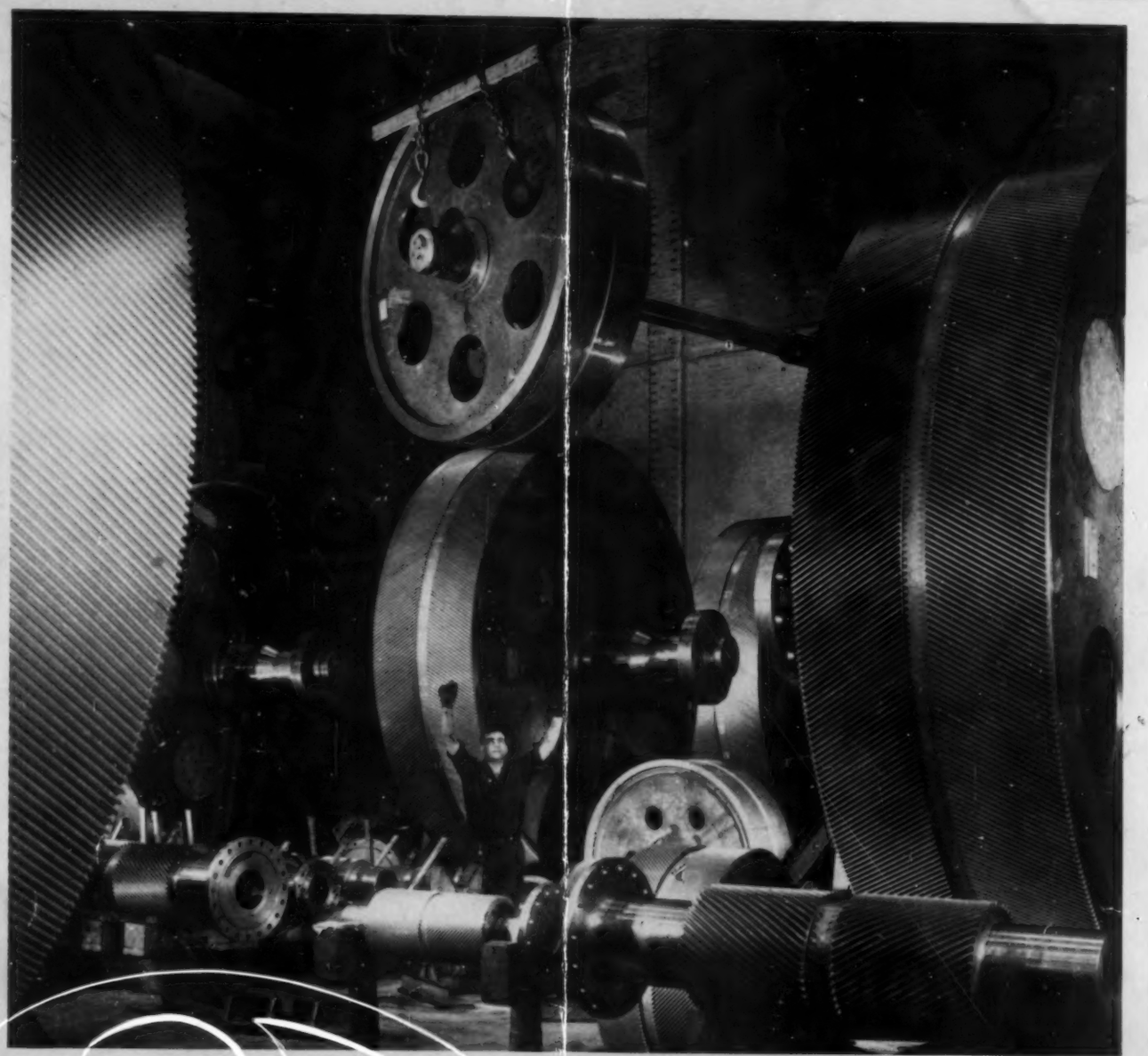
BUSINESS SCREEN

MAGAZINE

JAN 12'44



No. 4 VOL. 5-1943

when training with

SIGHT, SOUND, SEQUENCE

Sight without Sound . . . both without Sequence . . . leaves impressions inadequate, leaves only shallow grooves in memory. But combine them and the maximum teaching power and activating force is unleashed at its greatest.

Our Nation's Victories on all Fronts testify to this better, faster way of training millions in our Military Forces—and millions more in our factories. Likewise, 16mm Sound Motion Pictures herald a new era of education, training and progress in post-war years.

16MM SOUND MOTION PICTURE EQUIPMENT

VICTOR REG. U.S. PAT. OFF. 16 MM

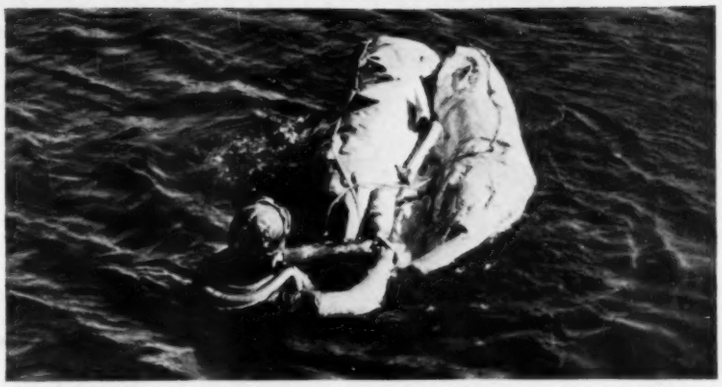
SIGHT SOUND SEQUENCE
THE WORLD'S GREATEST TRAINING FORCE

VICTOR ANIMATOGRAPH CORP. HOME OFFICE AND FACTORY: DAVENPORT, IOWA
242 W. 55th ST., NEW YORK CITY • 188 W. RANDOLPH, CHICAGO

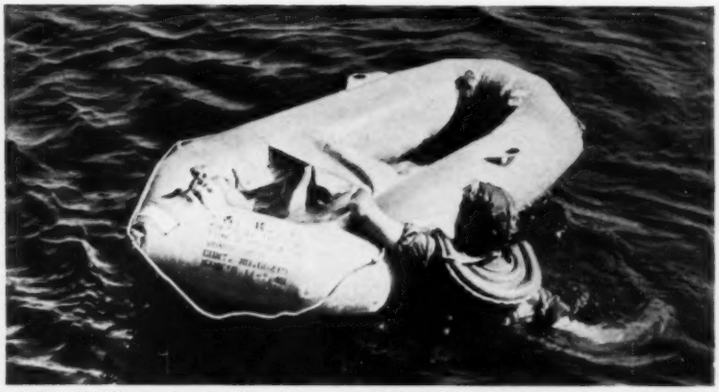
Distributors Throughout the World

Live pilot or dead hero?

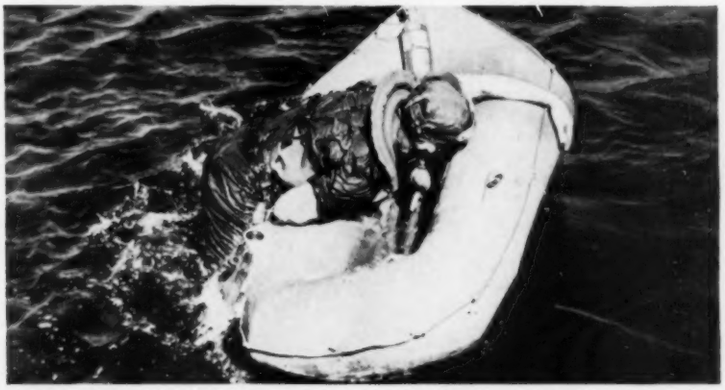
(THESE PHOTOGRAPHS MIGHT MAKE THE DIFFERENCE!)



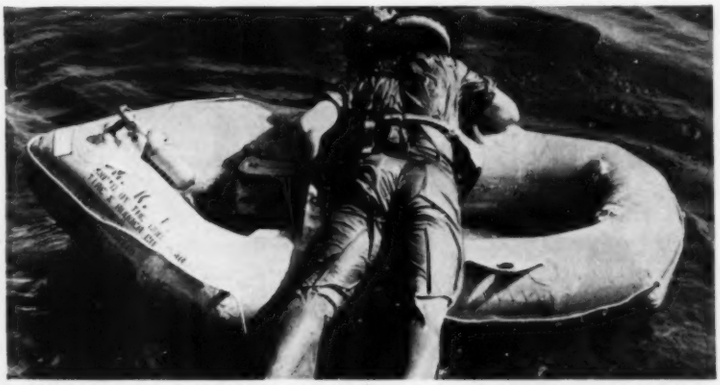
1 **His plane** is a dead pigeon. And so is this flyer if he doesn't know the tricks of handling his rubber raft. Our aviators get plenty of instruction, but training pictures like these speed up the process. This shot, for instance, is a graphic reminder that, first of all, the valve on the bottle of CO_2 must be turned to inflate the raft.



2 **Clearly illustrated** in this photograph is the basic step in the special technique of getting aboard. Notice how the left arm is slipped under the seat to provide leverage for the difficult hoist out of the water.



3 **This is** the most critical part of the operation, and requires great dexterity. Observe the position of the right elbow, and the legs hanging straight down. Every detail is important; this is the stage where real know-how pays off.



4 **Of course,** flyers are taught the necessity of grasping the far side of the raft and throwing the body *rigidly* across it. But this picture *dramatizes* the point so a trainee will never forget it. Once in this position . . .

5 **The self-rescued pilot** is master of the Bouncing Betty and can ease himself into the seat. With the collapsible oars set in the flaps, he's ready to go places. There's nothing left to do but row—and pray!

OFFICIAL U. S. NAVY PHOTOS

TO GET THE PICTURES it wants and needs, the Navy has a corps of skilled, alert photographers.

Training pictures like those reproduced above teach valuable lessons quickly and easily.

They speed the transformation of raw recruits into efficient fighting men.

But producing training films is only one phase of the important task assigned to the Navy's photographers.

Battle Stations, Too

They sail with the battlewagons and fly with the fleet air arm. Their reconnaissance photos, taken at great risk, help in the planning of tactics.

They don't often get their names in the papers, these unsung Navy photographers. But their work is frequently behind the deeds of the men who do.

Ask the admirals—they know!

We're Sure You'll Understand

The record shows that Agfa Ansco supplies a greater percentage of its film to the Government than does any other photographic manufacturer.

And about three-quarters of all Agfa Ansco products made today go to the Armed Forces or war industries.

So, if you find temporary shortages of your favorite Ansco film, remember where it's going—and what it's doing. We're sure you'll understand.

Agfa Ansco

BINGHAMTON, NEW YORK

KEEP YOUR EYE ON ANSCO—

FIRST WITH THE FINEST

How To Save At Least Three Months

PROOF

If you want proof that Caravel Plans get results, check with

American Bible Society
American Can Company
American Viscose Corporation
The Bates Manufacturing Company
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The Borden Company
Cadillac Motors
Calco Chemical Company, Inc.
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Pepsi-Cola Co.
Remington Arms Company
Socony-Vacuum Oil Company, Inc.
Swift & Company
The Texas Company

OR ANY OTHER CARAVEL CLIENT

TRAINING A SALES FORCE and dealer organization to function at top efficiency is no small task—even in peace time.

Yet this is the task which many companies—yours, quite possibly, among them—must be ready to face when the signal comes for reconversion.

The course of least resistance is to wait until the surrender of the Axis Powers gives you the go-ahead.

But this will mean the loss of at least three months—and just as sure as shooting you'll be caught by your smart competitors flat-footed!

A better alternative—already adopted by a number of our clients—is to begin your planning NOW. By retaining people who know how to do the preliminary research . . . how to select the most useful training media for the purpose (whether motion pictures, slidefilms, manuals, or a combination of all three) . . . how to use these media to best advantage . . . how, in short, to build a completely integrated and continuing training program that will do the job.

Much of this work can be started now—without interfering with your war work in the slightest.

If you'd like to save months of needless delay and be ready to start when the signal flashes, write us today for suggestions as to a sound and practical procedure.

CARAVEL FILMS

INCORPORATED

New York • 730 Fifth Avenue • Tel. Circle 7-6112

When the Chips Were Down —They Turned to Motion Pictures

The results are making history! The conversion of *ten million* civilians into an efficient fighting machine is being speeded up measurably by the widespread use of motion pictures.

American industry will not miss the significance of this important development. After the war—sound motion pictures more than ever will be standard equipment for selling, training, educating and publicizing.

Today, all Ampro projectors are going to the Armed forces. But after D-Day—Ampro projectors will be available for helping U. S. industry convert to a peace-time basis. Write today for the Catalog of Ampro 8 mm. and 16 mm. silent and sound projectors.

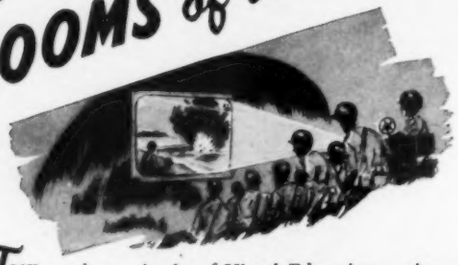
Buy War Bonds

AMPRO

Amprosound Model YSA

Ampro Corporation **Chicago 18, Ill.** ***Precision Ciné Equipment***

His IDEA Took Motion Pictures to the CROSSROADS and CLASSROOMS of the World



THE modern miracle of Visual Education—given full leash by the speed-up demands of War—had its beginnings in 1912 in a *"suitcase projector"* that was destined to take motion pictures out of the theater into the meeting places and classrooms of the world.

For three decades Dr. Herman A. DeVry—the man who conceived the IDEA of PROJECTOR PORTABILITY—made a succession of engineering contributions to the progress of Visual Education that won him a place with Thomas A. Edison and George Eastman on the Honor Roll of the Society of Motion Picture Engineers.

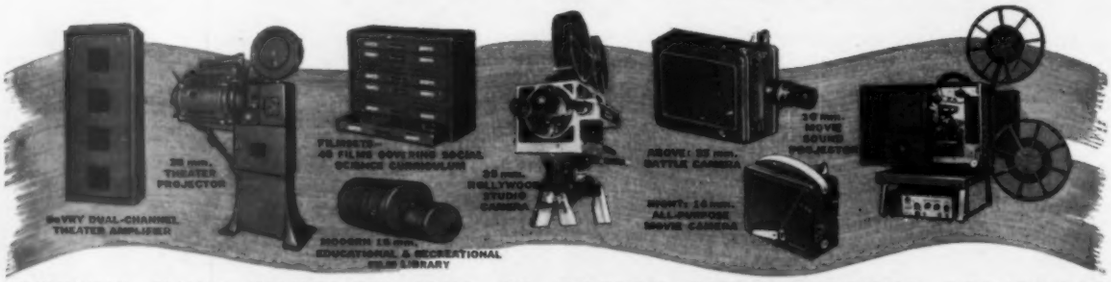
Today's mass production and fighter film-training programs were presaged by his 1914 pioneering of a school library of 86 motion pictures on major subjects of the school curriculum—complete with teacher study guides. In 1925 he established the *DeVry School of Visual Education,* which developed into the National Conference on Visual Education—the largest organized force in the visual field dedicated to the furthering and perfecting of "learn-by-seeing" techniques. Also in 1925 he founded *DeForest's Training, Inc.,* to teach Electronics with the aid of motion pictures.

Dr. DeVry would have been 67 years of age on November 26th. For the company that bears his name, 1943 is the 30th anniversary of its founding. Over its plants flies the coveted Army-Navy "E" with Star—designating continued excellence in the production of motion picture sound equipment—another "first" for DEVRY—another tribute to the vision, determination and integrity of its founder—whose inherent modesty would disclaim the oft' heard tribute, *"Father of Visual Education."*

1876-1941

DEVRY CORPORATION

NEW YORK 1111 ARMITAGE AVE., CHICAGO, U.S.A. HOLLYWOOD


35 mm. THEATER PROJECTOR
DeVRY DUAL-CHANNEL THEATER AMPLIFIER
FILMSETS—48 FILMS COVERING SOCIAL SCIENCE CURRICULUM
MODERN 16 mm. EDUCATIONAL & RECREATIONAL FILM LIBRARY
35 mm. HOLLYWOOD STUDIO CAMERA
ABOVE: 35 mm. BATTLE CAMERA
BELOW: 16 mm. ALL-PURPOSE MOVIE CAMERA
16 mm. MOVIE SOUND PROJECTOR

WORLD'S MOST COMPLETE LINE OF MOTION PICTURE SOUND EQUIPMENT

SHOW THIS MOVIE TO YOUR WORKERS NOW!

A Mighty New CASTLE Battle Film

"U.S. MARINES CAPTURE TARAWA"

AMAZING on-the-spot movie record of the storming of Jap-held Tarawa Island! Startling scenes and gripping closeups of the actual battle!

You see our heroic Marines dashing toward the Jap-held island! You see them facing terrible odds as they advance under withering fire to capture their objective!

Here is the living record of the bitterest battle in all Marine Corps history! A page of flaming heroism for Americans to cherish forever!

Own it now!

These and other Castle Films available at your PHOTO DEALER

OWN THIS FILM-SHOW IT REPEATEDLY AT

LOW COST

16mm. Titled Version $8.75

16mm. Sound-On-Film $17.50

CASTLE FILMS INC.

World's Largest Distributors of 8mm. and 16mm. Film

RCA BLDG. NEW YORK 20 | FIELD BLDG. CHICAGO 3 | RUSS BLDG. SAN FRANCISCO 4

AGAIN AVAILABLE!

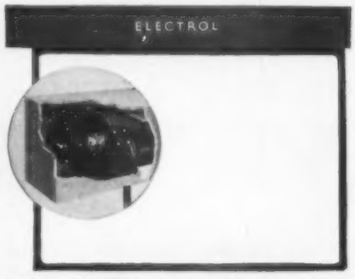
A LIMITED QUANTITY OF DA-LITE SCREENS

(Reg. U. S. Pat Off.)

CAN NOW BE SUPPLIED FOR

Pre-Induction Training, Vocational Training and Other Uses Approved by the W.P.B.

The Famous **CHALLENGER** can serve in many classrooms. It is light in weight, easy to carry and can be set up quickly anywhere. It is the *only* screen that can be adjusted in height merely by releasing a spring latch and raising the extension support. (No separate adjustments of case.) The Challenger's specially processed Da-Lite Glass-Beaded surface shows pictures always at their best. It is especially fine for Kodachrome projection.



The DA-LITE ELECTROL is operated entirely by electrical control. Because there is no tugging on the screen fabric when it is unrolled from the case and because the fabric is in its protective case when not in use, it lasts longer than is possible with any other type of screen mounting.

For the first time since August, 1942, *steel* can again be used in the manufacture of a limited quantity of screens *for certain civilian uses.* The current W.P.B. order L-267 supersedes order M-126 which previously had limited the use of steel in screens to *only* those which were made for the armed forces.

Those who need Da-Lite Screens should apply to W.P.B. for authority to purchase, using form 1319, which may be obtained from local W.P.B. offices, Da-Lite visual education dealers, or from us. Orders must be filled in the sequence in which they have been approved. Because the quantity of screens that we are permitted to make is limited, immediate action is necessary. All models and all sizes of Da-Lite Screens will be available in restricted quantities but made to the same high standard of quality for which Da-Lite Screens have always been famous.

Mail the coupon for Forms 1319

NO SUBSTITUTE MATERIALS

No Substitute for Experience!

DA-LITE SCREEN CO., INC.
Dept. 11B, 2723 No. Crawford Ave., Chicago 39, Ill.

Without obligation to us send ..... sets of W.P.B. forms 1319.

Name .....

School .....

Address .....

City..... State.....

Quality Screens for 34 Years

How about a NEW kind of plant party THIS Christmas!

Scene from *Child of Bethlehem*, beautiful filming of the Original Christmas Story. Available from the Filmosound Library.

A *MOVIE* party . . . right in your own plant . . . keyed to the Spirit of Christmas with grand, *Christmas-y* films . . . from the B&H Filmosound Library.

Charles Dickens' immortal *Christmas Carol* brings flint-hearted old Scrooge and the three Christmas Ghosts to your holiday screen in the movie *Scrooge*.

Child of Bethlehem and *A Saviour Is Born* bring you the ageless story of the *First* Christmas.

And then for honest-to-goodness holiday hilarity your gang will love Irene Dunne in *Lady in a Jam* or Abbott & Costello who *Keep 'em Flying* or a dozen and one clever Christmas Cartoons like *Toytime, Christmas Night* and *Robinhood Rides Again*.

War films, too, are timely for year-end showing. *Battle for Tunisia, Victory in Sicily* and *News Parade of 1943* remind warworkers of the great task they've helped to do in 1943.

Try this modern, interesting kind of plant party *this* Christmas. It'll be a celebration that everybody in your organization will remember for years.

The Bell & Howell Filmosound Library has *all the films* ready and waiting. Reserve them *now* by sending the coupon below . . . and don't let the lack of a Filmosound Projector stop your plans. Your local schools likely have one you may borrow during the holiday vacation. Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

Scene from *Scrooge*, the film story of Charles Dickens' classic A *Christmas Carol*. Available from the Filmosound Library.

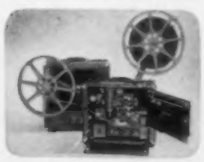
Another scene from *Scrooge*. Bob Cratchit comforts Tiny Tim. You'll meet all Dickens' famous characters in this great film.

A PROMISE TO EVERYONE WHO'S WAITING TO BUY POSTWAR FILM EQUIPMENT

The new Cameras and Projectors that will bear the B&H mark after Victory will *not* be hurriedly assembled from leftover parts. They'll be fitting companions to the famous Filmo products that you know. They'll be improved by an engineering staff that is discovering new things in the urgency of war production. You'll buy them and use them with the same pleasure and confidence you've always had in B&H equipment.

AN OPPORTUNITY FOR A GREAT PEACETIME FUTURE

We want expert engineers . . . experienced in electronic and mechanical design . . . to help us in the important and exciting task of exploring the broad peacetime horizons of OPTI-ONICS. It's a big job . . . for big men. If we're talking your language, write us your whole story and send your photo. We'll set up an interview. *Address:* Chairman, Opti-onics Development, Bell & Howell Company, 7100 McCormick Road, Chicago 45, Illinois.



THE FILMOSOUND V . . . —

now produced exclusively for the armed forces, is a B&H engineering achievement which maintains high performance standards despite restrictions of critical materials.

Opti-onics
BELL & HOWELL

*Trade-mark registered

BUY MORE WAR BONDS

***Opti-onics is OPTIcs . . . electrONics . . . mechanICS. It is research and engineering by Bell & Howell in these three related sciences to accomplish many things never before obtainable. Today Opti-onics is a WEAPON. Tomorrow, it will be a SERVANT . . . to work, protect, educate, and entertain.**

Products combining the sciences of OPTIcs • electrONics • mechanICS

PRECISION-MADE BY

Bell and Howell

Bell & Howell Company
1808 Larchmont Ave., Chicago 13

That Christmas Movie Plant Party idea intrigues us. We'll want these films.....

.....

on.....
date

Also information on ( ) other features
( ) cartoon shorts
( ) short subjects
( ) war films

Firm.....

Address.....

City.....*State*.....

Requested by.....

This year we'll take the usual greeting and merry-making time and devote it to the job at hand by expressing in effort and sacrifices our gratitude to the men and women who are out there in far away places doing the real fighting for us . . .

Wilding Picture Productions, Inc.

NEW YORK • CLEVELAND • DETROIT • CHICAGO • HOLLYWOOD

How would you like to lunch with *Betty Grable?*

MIDSHIFT MOVIES—for those war plants receiving approval for such showings from the major producers—are now bringing Hollywood's brightest stars to war workers while they eat. These showings of 16mm reprints of major studio features and shorts pay rich dividends in labor-management relations, are simple to screen and low in cost. It doesn't matter how large or how small the plant is. Our clients range from those with close to 50,000 workers to less than 500. The only essentials are a 16mm sound projector, a portable screen, and a workshop, cafeteria or auditorium in which to screen the movies you rent from us. And if you haven't a projector, we can help you get one.

STEP UP PRODUCTION and build morale with the help of Midshift Movies! The same pictures that thrill our fighting forces overseas can send your own workers back to their benches relaxed and smiling. And if absenteeism is a problem—independent surveys place Midshift Movies high on the list of cures. Here's how it works: In our laboratory we cut the feature pictures you pick out into serials—like the old-style Pearl White "keep 'em coming" thrillers—so that one feature lasts a whole week, running about twenty minutes each day. Some plants prefer shorts—sports, cartoons, comedies, science—instead of serialized features. As the largest 16mm film library in the world, we invite your inspection of our catalog of shorts and features, and the assistance of our branch office nearest you, in stepping up production through the help of the greatest morale-builder this war has yet produced: Hollywood!

FILMS
INCORPORATED

330 WEST 42ND ST., NEW YORK 18 · 64 EAST LAKE ST., CHICAGO 1, ILL. · 314 S.W. 9TH AVE., PORTLAND 5, ORE
1709 W. 8TH ST., LOS ANGELES 14, CAL. · 6612 SNIDER PLAZA, DALLAS 5, TEXAS

PLACE A RULER ALONG THIS LINE—TEAR OFF AND MAIL

As the war progresses, labor-management problems keep changing. In some plants, the big headache is turnover. In others it is lack of skills. For most, it is a never-ending quest for a better answer, with the bottom of the barrel in plain view.

Into such a spot, Midshift Movies are jumping with amazingly successful results. And why not? Workers are people. People love movies, mainly because they offer escape, relaxation, complete change of pace. You can invite the tremendous morale-building ability of stars like these right into your plant, at a cost so reasonable you couldn't guess it unless you knew:

Jean Arthur	*Bob Hope*
Charles Boyer	*Myrna Loy*
Bing Crosby	*James Stewart*
Marlene Dietrich	*Loretta Young*
Betty Grable	*And many others*

We have a catalog we want you to see. No obligation, of course. Our conviction is that you will agree with us, once you see the catalog. Here are a few of the serialized features you can rent:

Captain Fury
The Ghost Breakers
Thirteen Hours by Air
Union Pacific
Wake Island
Wings of Darkness

But don't decide that until you get your copy of our catalog. Write for it—won't you?

☐ *We are interested in learning how other war plants are utilizing their lunch rooms or cafeterias for Midshift Movies.*

☐ *We do not have a projector. Send a projectionist's name.*

NAME OF COMPANY

YOUR POSITION

ADDRESS

"When you are a horizon lookout, it will be up to you to give first warning of ships, icebergs, land, smoke—anything appearing on the horizon."
—from Navy Training Film, "Lookout Series."

How important it is to keep an alert eye on the Horizon! Sighting *new* developments today is essential to intelligent planning for post-war activities. The unprecedented use of motion pictures and slide films in the training of our Armed Forces marks a trend that alert industries will not overlook in preparing for tomorrow.

Today this organization's efforts are devoted entirely to producing training films for Uncle Sam. Our creative, production and laboratory facilities have been steadily advanced to keep pace with accelerated wartime needs. Hence, at the earliest opportunity for again serving users of industrial films, we will be in a better position than ever to fulfill the demand for films of outstanding merit, based on 50 years' progress in visual presentation.

BURTON HOLMES FILMS, Inc. — Quality Showmanship for 50 Years

BURTON HOLMES FILMS
Incorporated
7510 North Ashland Ave. Chicago
Telephone: ROGers Park 5056

Sight & Sound

★ THE MOOD OF THE HOUR is sobering, its keynotes realism and preparedness. The immediate crisis of the world struggle is just ahead and it will not be won without a price. The results of the years of preparation will not be measured in statistical tables but in the comparatives of courage, determination, faith and just plain guts.

Just where does this industry come into the pattern of battle? Its manufacturers have turned their talents of design and construction, their solid knowledge of electronics and optics to many useful results in training and combat equipment for the Army, Navy and their air forces. Gunnery and pilot trainers, telescopes, fire control equipment, bombsights, aimers, and projection equipment of all types have flowed from our production lines in record-breaking quantities. Ideas and results have won commendation from the armed forces, Army-Navy E awards in public ceremonies.

The industrial film producers, who bragged little but turned out the pictures by the mile, were responsible for physical production on a majority of training films for the Navy, for all in the U. S. Office of Education's current program and its first series, for a majority of the technical instruction subjects provided by war product makers to the Army and Navy for ordnance, airforce and other mechanized training.

This was the *physical* total. *Results* in training were something else but they were being studied closely as the year matured. *Getting them shown* right became as important a watchword as getting training films made. Not projectors but officer personnel with an apathy toward new ideas was the great bottleneck. It was that way in the war

(PLEASE TURN TO PAGE THIRTY-SEVEN)

BUSINESS SCREEN

NUMBER FOUR — 1943-4 — VOLUME FIVE

Cover: A war plant production scene at the General Electric Company, Schenectady, from a recent G. E. motion picture.

Contents

What's Ahead for Visuals 15
Measuring Film Usefulness in Training 17
A Review of the Vandermeer Study
The Facts of War in Army Films 19
Suggestions for Showing 21
Midshift Movies Aid Morale 22
Reviewing the News Parade 23
USOE Production on the West Coast 24
Slidefilms in Motion Study 26
Films Cut Absenteeism 28
Depth Pictures Speed Training 35
Camera Eye: The News in Review 38

★

Issue Four, Volume Five of Business Screen Magazine. Issued by Business Screen Magazines, Inc., 157 E. Erie St., Chicago 11, Illinois on December 20, 1943. O. H. Coelln, Jr., Editor; E. T. Lundgren, Production Manager. Subscription: $2.00 for eight numbers; Foreign & Canada $3.50, including duty. Entire Contents Copyrighted 1943 by Business Screen Magazines, Inc. No editorial material may be reproduced without the express permission of the publishers. Trademark Reg. U. S. Patent Office.

Scene is in one of the Curtiss-Wright Airplane Division classrooms for training U. S. Army ground crews.

Visual Training dons olive drab

How to take a fighting plane apart and put it together again—how to "keep 'em flying" — how to combat enemy tactics—how to win this war quickly—is the problem!

Speed in imparting a clear understanding to millions of fighting men — millions of civilian defense workers — is attained best by projection methods. Dramatically, they magnify and project charts, drawings, photographs and detailed close-ups. The student can retain the graphic picture better than the words of the instructor. Seeing becomes knowing how. Knowing how is the answer!

ARMY E NAVY

Optical instruments are so vital to war and public health that the nation's needs absorb practically all of Spencer's greatly increased production.

Spencer LENS COMPANY
BUFFALO, NEW YORK
SCIENTIFIC INSTRUMENT DIVISION OF
AMERICAN OPTICAL COMPANY

The most conveniently adjustable Projection Screen ever made!

. . . Only Radiant Can Offer You All These Important Features!

For quick convenient setting up and easy adjustment to exact size and position — Radiant Screens offer an exclusive combination of these features:

AUTOMATIC CLUTCH

A sure acting arrangement that permits instantaneous raising and lowering without the necessity of manipulating screws and bolts. So simple and easy to operate a child can use it.

TRIPOD RELEASE

For opening or closing tripod legs quickly. Legs lock into position without set screws or plungers. Light pressure on convenient lever closes legs instantaneously.

Auto-LOCK

For raising or lowering center extension rod instantly. No set screws, spring plungers or other hand operated devices.

CONVERTIBLE FROM SQUARE TO OBLONG

Radiant square-sized screens are convertible to oblong by merely raising screen to plainly marked position.

PLUS Other Radiant Features

Radiant Screens can be instantly raised or lowered to *any* desired position (not just 2 or 3 intermediate positions) without adjusting set screws or plungers. Radiant Screens have the famous "Hy-Flect" Glass Beaded Surface and extra strong square tubing. All metal parts fully protected against corrosion.

"The Army Uses Training Films" A Valuable Manual for all Film Users

The U. S. Army has permitted Radiant to publish a new manual on training with films. The material is based on actual training experience — and is humorously illustrated. Sent FREE to all who request it on business letterheads.

Can You Get Radiant Screens Now?

The answer is "yes". The complete Radiant line of metal screens is available in limited quantities to essential users who obtain WPB approval of their applications. Others may obtain their choice of the full line of Radiant Non-Metal Screens. For complete details write today for new Radiant Catalog — just off the press!

RADIANT

BETTER SCREENS FOR BETTER PROJECTION

The Radiant Mfg. Corp.,
1141 W. Superior St.,
Chicago 22, Illinois

Gentlemen: Please send me FREE copy of the new complete, illustrated Radiant Screen catalog.

Name.....

Address.....

City.....Zone No.....State.....

Vital Statistics

about S/m productions for 1943

MOTION PICTURES

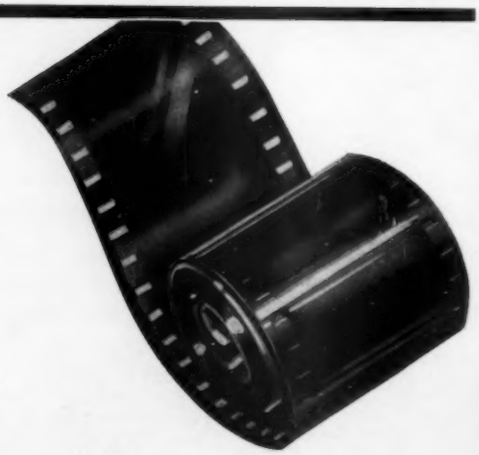
for

57% — — **THE ARMED SERVICES**

25% — — **GOVERNMENT AGENCIES**

18% — — **WAR INDUSTRY**

SLIDE FILMS



69% — **THE ARMED SERVICES**

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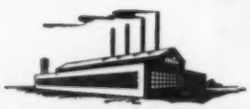

31% — **WAR INDUSTRY**

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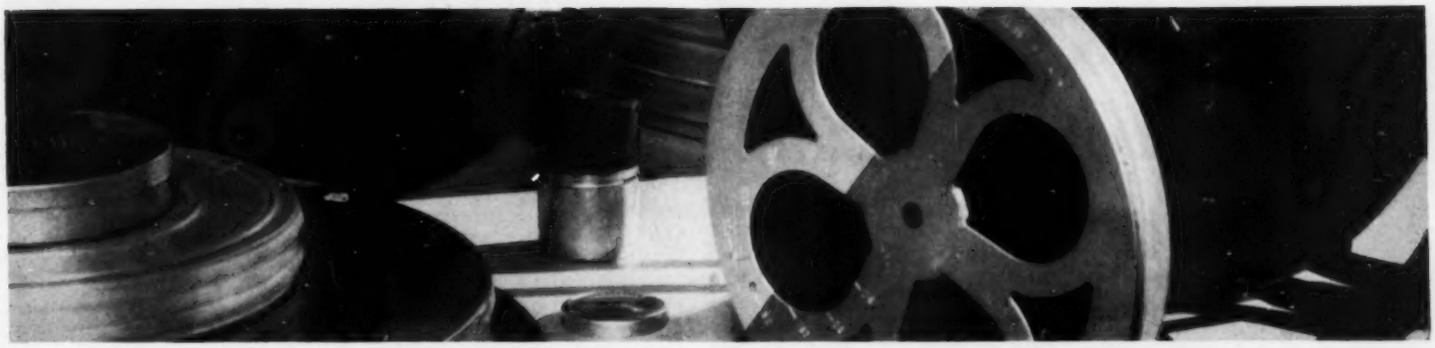
MOTION PICTURES — SLIDE FILMS

S/m

SOUND MASTERS, Inc.

165 WEST 46th STREET ★ NEW YORK



ROADS AHEAD FOR VISUALS

TWO VAST LABORATORIES in which visual aids to war training and war information are now undergoing their most critical tests, now exist in the war industries and vocational schools of the U. S. and on the worldwide battlefronts and in the training centers of the armed forces.

Here the motion picture and slidefilm, as well as special devices embodying visual education principles, are meeting the real test of their worth in speeding the learning process and of their ability to bring real understanding of the complex issues and of the obligations of the individual in this war. The hour of trial is at hand.

THE ISSUE IS ONE OF LIFE OR DEATH

To most Americans accustomed to think of the film as a vehicle of romantic escape through its popular entertainment forms, the idea that it is in reality another and possibly, the greatest, medium of communication is at long last being realized through its extensive use in the war plant, the training school, the community center and in the training and indoctrination of millions in the armed forces of these United Nations.

It is upon the thousands of motion pictures and filmstrips produced for instruction that the nation must rely for a most important segment of the statement: *what our soldiers and sailors don't know CAN hurt them.* The audience at stake must be counted at the full total of our mobilized forces, soon to exceed 10,000,000 men.

From the first day of arrival at the reception center, through the various specialized courses of instruction given later, our fighting men and women see and hear visual lessons and receive, visually, indoctrination material.

SIX MILLION WAR WORKERS TRAINED

Since July 1, 1940, nearly 6,000,000 enrollments in all types of courses under the program of Vocational Training for War Production Workers conducted through State boards for vocational education and local public schools in cooperation with the U. S. Office of Education have been counted. According to Paul V. McNutt, chairman of the War Manpower Commission, the especially prepared motion pictures provided for the program through the Division of Visual Aids for War Training of the Office of Education, have cut as much as 25 to 30 per cent from the time required for teaching workers new skills.

THEY ARE MAKING EDUCATIONAL HISTORY

"These war training films, designed as a new type of teaching tool for instructors, are making educational history by teaching workers essential skills motion by motion," McNutt declared recently in a Washington address. Supplementing the work of vocational instructors and the vital prerequisites of actual physical learning and doing upon shop equipment, the pictures speed understanding of machine tools and complicated skills in which the unskilled men and women from all walks of life must be trained.

"Mass application of training films to fit these workers for wartime jobs is one of the secrets of the production miracle being accomplished in the United States," chairman McNutt asserted.

INDUSTRY SPEEDS INDOCTRINATION OF WORKERS

Another vastly important area in which visuals are proving their indispensable place in the war effort, is that of getting understanding and cooperation from new employees in these war plants. Films that show the entire plant organization and facilities, explain management's point of view, the various deductions required, health facilities, benefit plans and the hundred other small details which help fit the worker to the groove of the new job are now being widely and successfully used by such organizations as Armstrong Cork, Boeing, Thompson Products and others in the field of war production.

FILMS KNOW NO BARRIER OF LANGUAGE

The motion picture and filmstrip know no barrier of language. The visual pattern readily adapts itself to the translator. Better understanding between the United Nations has been greatly aided by battlefront reports such as *Desert Victory* and *Target for Tonight* and the epic reports of the Russian battles. It is just such a picture, *Welcome to Britain*, which is now being shown to all American soldiers arriving in Britain, of which it has been said—

"Unless Allied propaganda planners call a halt to pictures like this, there is very great danger that Britons and Americans are going to wake up after this war with a certain warm understanding of each other."

The plans of our State Department with relation to the use of the motion picture for the educational reconstruction of the occupied lands in Europe will deserve serious and extensive consideration in the year ahead.

MAKE THESE ROADS SOLID AND LASTING

The paths of physical film production are well laid out for the year ahead. They will endure the tests of time and results only through constant educational effort on the part of those in charge. *There is serious need for such effort among industrial training personnel.* There remains no doubt as to results when these aids are properly applied but *there is little real and widespread knowledge as to simple principles of proper application of visual education.*

Achieving this will be a most important goal as a degree of adequacy is achieved in actual production. Not mere distribution alone but proper *utilization* of visuals is the *real* goal ahead.

A.V.A. REPORTS

★ THE ROLE OF MOTION PICTURES and slidefilms in war training was prominently featured in several well-attended conferences at the mid-December annual convention of the American Vocational Association held in Chicago. At the December 17 forum on "War Training Using Visual Aids" Floyde E. Brooker, director of Visual Aids for War Training for the U. S. Office of Education, was a featured speaker.

Leigh M. Nason, Technical Specialist for this Division, was Chairman of the program which also included featured appearances by Eldon Robbins, of Michigan, Ernest B. Luce and E. Kerzman, educational chief for Illinois Tool Works, Chicago. A verbatim brief of Mr. Kerzman's interesting report follows:

A Precision Training Program Utilizing Visual Materials

by E. Kerzman

I IMAGINE our problems in setting up a training program for new employees were similar to others who were planning their programs, but I believe ours were more difficult because of the nature of our products and the methods we use in manufacturing.

Our products are precision metal cutting tools, rifling broaches, and precision measuring machines. Ours is not of a repetitive type of manufacturing, but more on a tool room basis or like a large job shop.

We examined and analyzed several training procedures but found that none really filled our requirements as we had to carefully match the training content with the specific jobs in our shop.

These jobs in the operating section were for tool inspectors, lathe and milling machine operators and precision grinders. In the grinding section alone we have seven different types of grinders on tool work (1. surface, 2, arter, 3. blanchard, 4. cylindrical, 5. internal, 6. thread).

We set up our program in two sections. The first section is a training program for foremen and supervisory forces. With the influx of new workers with new production problems, and the need for maximum output, this training content pertained mostly to the problems of handling people (mostly green help). We also had J. I. T., J. R. T. and J. M. T. sessions.

FILMS AND MODELS USED

In compiling the curriculum for the second section we included series of films (16mm sound) produced by the U. S. Office of Education. Having machines in the school room would have involved a lot of individual instruction so, as we wanted to keep the training period as streamlined as possible, we used the films instead. I also designed and made giant models of the protractor vernier and micrometer to further simplify instruction for the women students.

Our procedure was to show the film first, then study the text; show the film the second time, and then use the giant model; then actual tools, and then have a general class discussion.

Both of these programs immediately proved successful, and I believe the use of the slide films and the sound movies accelerated the instruction period considerably.

The training period lasted from 150 to 200 hours. 28 hours per week spent in the classroom, and 16 hours per week spent in the shop. Over 700 students went through the school, of which 190 were female.

ADVANTAGES AND LIMITATIONS

In overhearing some opinions in using visual aids some are of the opinion that the "*movies*" appeal more to the emotional side than to the intellectual, but I am of the opinion that the trainees have an opportunity to see the actual performance and use of machines and tools and the operating techniques involved and are able to memorize and copy these actions when the opportunity presents itself.

♦ The Industrial Arts Section Meeting on Visual Aids was under the direction of Paul C. Nelson, Wisconsin vocational educator. Principles of the visual medium, sources, technics and the organization of visual instruction were developed during this session.

Desert Victory Now Available in 16mm

★ One of the great battle pictures of the war thus far, the epic *Desert Victory*, has just been released for 16mm showings to war plant audiences, adult group organizations and general non-theatrical use, according to announcement by the British Information Services. *Desert Victory* is the official film record of General Montgomery's advance from El Alamein to Tripoli, produced by soldier cameramen who fought and marched with the British Army on the thirteen hundred mile trek across the sands of the Western Desert.

WIDELY ACCLAIMED FOR REALISM

Colonel David MacDonald, in charge of production, went into the front line with six officers and twenty-six cameramen. Four were killed, seven wounded and six were captured in resulting actions. 200,000 feet of film was secured together with a considerable quantity of film made by the German Army Film Unit, captured in the advance. This was cut and edited into a coherent 5,400-foot narrative.

In pictures like these, war workers and their families may grasp the realities and sacrifices of war made by the men and women "out there." The actors in *Desert Victory* are the common soldiers, the men of the infantry and the tanks for the most part, whose advance at El Alamein was a turning point of the war. Absolute factual detail is one of the finer points of the picture and one which makes it a wartime "imperative" for the film library record of World War II.

COVERS THE WHOLE SCENE

The picture covers the battle from the point where General Auchinleck made his stand sixty miles west of Alexandria following Rommel's advance across Egypt. From then on the story is one of victorious advance by Montgomery against Rommel's panzers.

The highlight of the film is the battle of El Alamein, when the full weight of British armor, by that time amply supplemented by newly-arrived American equipment, was thrown against Rommel's lines. Cameramen moved forward under a thunderous bombardment to secure the outstanding actual battle scenes thus far recorded.

16mm prints are available through offices of the British Information Services in New York, Chicago, San Francisco, Hollywood, Washington, New Orleans or at any British consulate at print cost price or at daily rental cost only.

Scene from "Desert Victory" as an Australian group leader crouches, nearing the enemy.

A strong point is over-run. Trampled field telephone wires and a dead Nazi bear mute witness.

An irrepressible British Tommy gives the "V" sign to a couple of his German prisoners.

MEASURING FILM USEFULNESS

Effectiveness in War Plant Training Is Measured in Engine Lathe Study

BY DR. ABRAM VANDERMEER
as told to the Editor of Business Screen

THE USE OF motion pictures for industrial training has created unbounded enthusiasm in many quarters, not without warnings from others that dependence is to be placed only on proved facts. Some of these facts are provided by a scientifically controlled study of war training classes as recently completed by the senior author. A preliminary report of this work appeared in BUSINESS SCREEN, Issue 3-1943, page 37. This article will present some of the high spots of the methods, and the conclusions of the study.

The present study was confined to seeking the most accurate possible answers to a few narrowly-defined questions. Of these the primary one was whether "lathe operators whose instruction includes the carefully integrated use of motion pictures develop essential skills to the required level in a shorter time than those whose training does not include such visual aids." A secondary question was whether motion pictures help to develop at the same time a better fund of appropriate technical information in the trainee's mind. There was some investigation also into the value of certain tests for predicting a trainee's success in operating a lathe with speed and accuracy.

THESE FIGURES TALK

Of first importance in the results is an indication that students who had the benefit of integrated film use in their training saved from 19 to 53 per cent of their practice time on a variety of lathe jobs. To put it another way, depending on the type of job, untrained workers can be expected to average from 22 to 104 per cent higher output of acceptable product per working hour on the engine lathe at the outset if they are first prepared for the work by educationally sound[1] use of motion pictures.

HUMAN FACTORS IN RESEARCH

Engineers and others whose scientific training has been largely in the physical sciences do not always appreciate the extreme difficulty of getting significant results from the sort of experimenting whose subject matter is the human hand and mind, and their reaction to different experiences. Psychological experimentation is confronted at the start

with the cold fact that in any group of persons, such as trainees for war jobs, no two individuals are exactly alike—nor can they be made alike. Difference between any two *individuals*, unavoidably present throughout any experiment, may be so great as to invalidate completely any intended measurements of differences in the effect of any two training processes.

To combat this tremendous difficulty, the experimenter must depend on the rigorous application of devices which are frequently not necessary at all when working with the natural sciences. He must depend largely on the principle that in large groups individual differences tend to "average out."

Therefore as a field for experimentation, he must find a place where a fairly large number of reasonably similar individuals are undergoing similar experiences. Secondly, he must have opportunity to examine each of these individuals separately, to determine in advance as closely as possible what differences among the individuals are most likely to impair the validity of his planned experiment, and must make due allowance for them.

The experiment will then consist of a thoroughgoing attempt to subject two similar groups to courses of experiences which are as nearly alike as possible, except that for one group (the "experimental" group) it includes the particular experience to be studied—in this case the viewing of motion pictures — while for the other group (the "control group") it does not.

Thus the general plan of the experiment was as follows: Seven classes of lathe trainees were divided into two groups. A wide variety of information, age, experience, education, and scores on various aptitude tests, was gathered on each individual to make sure that on the average both groups had equal ability and will to learn. The same three instructors put both groups through lathe training courses that were identical except that one group was taught with sound films while the other was not. Painstaking records were kept of the amount of time each student spent on each practice lathe job. Each lathe project was rated impartially as accepted or rejected. The main object of the experiment was to compare the average time required per acceptable product by "movie students" with that spent by those who did not view films.

WHY LATHE WORK?

Several reasons dictated the selection of engine lathe work for the experiment. It is an important line of work, the output of which can be definitely distinguished as either "good" or "bad", rather than somewhere inbetween. A piece is good if it passes inspection; meaning that at the points specified in the blueprint it measures what it is supposed to measure, within the prescribed limits of tolerance. It is not a particularly better piece if it measures even closer than required. If a piece has been cut smaller than the smallest measurement allowed, it is definitely worthless for its purpose, and if not small enough it is equally worthless until recut. A second reason for using lathe workers was that it was possible at the time to find available a number of trainees regularly entering and leaving this course large enough to permit using groups of sufficient size to insure the various individuals largely cancelling out each other's peculiarities. Finally, excellent motion picture films for this subject were readily available.

DOESN'T PROVE EVERYTHING

It is because experiments of this kind are so hard to plan and to conduct, with any approach to actual statistical validity in the results, that there has been so much depending, instead, upon mere opinions and "impressions" as to the value of motion pictures in job training work. While the investigator warns against drawing too broad inferences from the limited and precise conclusions arrived at, nevertheless it remains true that "one fact is worth a thousand theories." This study does provide scientific facts regarding the saving of time effected by one group in one area of industrial training.

OBJECTIVES OF THE COURSE

The experiment was conducted within the framework of a regular machine operator's training program. The course was given in the Morton High School (Cicero, Illinois) shops, for new employees of the Amertorp Naval Ordnance Plant. The training period was divided into six forty-hour weeks. Classes met eight hours per day from 10:30 P.M. to 7:00 A.M., Monday through Friday.

The general objectives of the course, as stated by the training director of the Amertorp Corporation, were as follows:

1. *The development of specific skills in lathe operation.*
2. *The acquisition of basic informa-*

(CONTINUED ON THE NEXT PAGE)

1 It must be emphasized that these results were not obtained by **merely showing motion pictures.** A very definite technique of film use based on accepted educational principles was an essential part of the experiment. This technique is described later in this article.

tion relating to machine operation.

3. *The development of skill in blueprint reading and shop mathematics, sufficient to carry on effectively in a factory situation.*
4. *The development of habits and attitudes conducive to safe and efficient machine operation.*

The training program had two supervisors, Mr. W. B. Leonard, of the Amertorp Corporation, and Mr. Paul Roise, Director of Vocational Education for Morton High School. There was one instructor in charge of each of three machine shop classes. All three instructors were craftsmen. None had had previous training in the theory or methods of teaching. The instructors in the beginning and advanced shops had been teaching for approximately six months at the start of the experiment. The instructor in the intermediate shop had been teaching for only one month.

Shop Facilities

The trainees were sent to the training center in groups of approximately fourteen. Each group spent an equal amount of time under the guidance of each instructor; two weeks each in the beginner's shop, the intermediate shop, and the advanced shop. Up-grading experiences designed to help the students to progress toward the four general objectives were provided in each room. The lathe skills required became more difficult as the student progressed, and tolerance became smaller.

The shop equipment was adequate. While the lathes in the beginners' room were noticeably inferior to those in the intermediate and advanced rooms, this fact could not affect the relative standings of the groups since all groups used the same equipment. There were slight differences in quality of machines within rooms. This was compensated for by rotating the students' assignments to the lathes.

Experimental and Control

The groups used were seven consecutive classes from the ordnance plant—taken "as they come", numbering about fourteen workers each, and in all probability typical of the thousands being hired for training all over the country. Trainees ranged in age from 18 to 55. About one-third had had four years of high school, mostly non-technical. One in four were women, most of whom were married. Many had husbands, sons or brothers in the armed services. Every trainee had had some work experience often clerical or "non-essential." Morale and desire to learn were high.

Of the seven classes, the experimental groups (to whom films were shown) included the second, third, sixth, and half of the seventh; the others formed the control groups. There was some loss in numbers from "dropping out." The scoring method did not of course, require exact equality of numbers between the two groups.

No competition was suggested between the groups, but members of the control group had the nature and importance of their own usefulness in the experiment explained and emphasized to them as frankly as did those in the experimental group. While each trainee kept his own time record, there was little opportunity for them to compare group averages.

The Training Film Used

Both groups completed the same six weeks' course, in the same shops, under the same instructors. The control group members viewed no films, but received the same general background information by the conventional lecture-demonstration method. Those in the experimental group had shorter demonstrations, and fewer, but in addition they were shown the appropriate motion picture films produced by the United States Office of Education and reviewed in detail in Business Screen, Victory Training Edition, Vol. 4, No. 1, and Vol. 4, No. 4.

The technique employed in teaching with the films is described in later paragraphs of this article. At this point it is important to consider the nature of the twelve projects which made up the course, and which film was used with each. The jobs are listed below in numerical order, as performed: Jobs 1-L, 2-L, and 3-L in the beginners' room; 1-H, 4-H, 5-H, 6-H and 7-H in the intermediate room, and 1-V, 2a-V, 2b-V and 3-V in the advanced room. (Jobs numbered 2-H and 3-H had been dropped from the course as too repetitive.) To conserve metal, successive trials were carried out when possible by further cutting on a previously used piece.

Beginners' Shop

♦ Early in their training period, before they had had any opportunity to work on the lathe, the experimental groups were shown two Government films, *The Steel Rule* and *The Micrometer*. Both films employ animation and real-life shop scenes to depict the structure, forms, operation, and use of the precision measuring instruments indicated by their titles.

Job 1-L required straight turning a 4¾ inch length of a steel rod down to four successive diameters each .063 inch smaller than the last. In preparation for this work, the experimental group viewed the film *Rough Turning between Centers*, which runs 16 minutes. This film has commentary and pictures combining to demonstrate preparing the work for the machine, and making the necessary roughing and finishing cuts. Emphasis is given safety precautions in dress and work, the necessity for constant reference to the blueprint, the lubrication of the machine, the care of the centers, and the proper use of the various controls. Closeups show the manipulation of the index dials, for the job being done.

Job 2-L required turning a steel rod to two diameters, each smaller by .125 inch than the last. Four trials were required. The film used was *Turning Work to Two Diameters* which runs about 14 minutes and discusses in detail the sequence of operations followed when turning a gear blank with its shaft from a solid piece of round stock. Turning the piece to rough size, laying off for the gear blank, rough and finish turning the shaft, rough and finish facing, and facing to length are shown in detail. Rough and finish turning of fillets are demonstrated. Special emphasis is given to the precautions and procedures used when turning to close tolerances. The method of establishing a reference point is given, and the reasons behind the method are indicated.

Job 3-L required turning a steel rod to five diameters. Four trials were required. Successive sets of diameters decreased .063 inch. All necessary film help had been given in connection with Job 2-L.

Intermediate Shop

♦ Job 1-H also required turning to five diameters, each section being reduced to .063 inch, whereas tolerances in the beginners' shop had been .001 inch for diameters and 1/32 inch for length, however, in the intermediate shop they became .0005 inch for diameters and 1/64 inch for length. Four trials were required. No additional film help was given.

Job 4-H required the turning of various tapers by the method of offsetting the tailstock. Four trials were required but since the time for the first trial included straight turning on the shoulders, final comparisons were made on the basis of the last three trials only. The tapers required, in inches per foot, were .250, .300, .475 and .600. Diameters at the large end of the tapers decreased in steps of .063 inch. As preparation, the experimental groups viewed the eighteen-minute film, *Turning a Taper with the Tailstock Set Over*. The importance of tapered parts in industry is depicted in the introduction. The formula for determining the distance to set the tailstock over in order to obtain a given taper is thoroughly taught. Animation is used to show how this method produces a taper. Special emphasis is laid on the care required by the centers when turning tapers by offset tailstock. Three alternative methods for setting the tailstock over the desired amount are demonstrated.

Job 5-H required cutting three sizes of National Fine Threads, eleven, thirteen and sixteen to the inch respectively, on stock of diameter from 1¼ to 1⅛ inches. Each thread was gaged by the fit of a special nut upon it. To demonstrate the skills required, a twelve-minute film, *Cutting an External National Fine Thread* was studied by the experimental groups. This film shows the characteristics of the American National Fine Thread, compares it

(Please Turn to Page 32)

A WORD ABOUT THE AUTHOR AND THIS STUDY

♦ Months of patient and painstaking research in this hitherto uninvaded area of study lie behind this investigation. Personally interested in this effort, the Editor of Business Screen watched its entire development. It is the first of many such investigations yet needed and it is in that spirit that we are presenting this condensed review of its findings. Dr. Vandermeer is now an ensign in the U. S. Navy, stationed in Philadelphia. The second and final part appears next month.

ARMY MOTION PICTURES GIVE AMERICAN INDUSTRY

THE FACTS OF WAR

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

A MESSAGE TO WAR PLANT EXECUTIVES ABOUT THESE FILMS

"These Army films show the finished products on which the parts our workers are making are fitted. They show those products in action—devastating action against the enemy. They are not beautiful pictures made in studios. They are made from landing barges, from the front lines of jungle troops and from raiding bombers."

MAJOR GENERAL H. S. AURAND

★ Army war films are now characterized by stark realism. When equipment is blasted by enemy munitions our cameraman records the damage. When American fighting men are killed by enemy fire, the camera shows that inescapable fact of war too.

Official Army motion pictures are taken at risk of life by Signal Corps and Army Air Forces photographers on the many battle fronts of the world. Our cameramen do not always come back from their missions of recording for us the deeds of our soldiers.

The men and women doing such a fine job on the production front are entitled to such graphic reports of the actualities of the fighting front. This is a people's war and a people's Army.

These Army films show the finished products on which the parts our workers make are fitted. They show those products in action . . . devastating action against the enemy. They are not beautiful pictures made in studios. They are made from landing barges, from the front lines of jungle troops, and from raiding bombers.

Men are killed and materials on which you have worked *destroyed.* The waste of battle must be replaced in a hurry! Your part in the march to victory is depicted. They are pictures of the products of your hands and brains in use by your soldiers.

The role of the war worker . . . whether management or labor . . . in the prosecution of this war is tremendously important. A close interdependence exists between the Army and the many people upon whom it depends for the war materials it *must* have. The Under Secretary of War, Robert P. Patterson, has directed that the resources of our combat photographic crews shall be utilized to the fullest to bring back vivid camera reports to the war workers.

Of one of the Army films, Mr. Patterson says, "For the first time in its history, the War Department is making an official report on the Military situation directly to the war workers of America. . . ."

That is the theme and essence of all of the new army industrial motion pictures. We hope that every man and woman engaged in war production in this nation will have a chance to see them—and see them regularly.

"1944 is the year of decision . . . there is no more waiting . . . we are ready for the test of our strength and spirit."

H. S. Aurand
Major General, U. S. Army
Commanding General, Sixth Service Command

SCENES LIKE THESE ARE TYPICAL OF ARMY PICTURES BRINGING THE WAR FRONTS TO OUR WAR PRODUCTION LINES

Worker audiences like these in U. S. war plants may now see official combat reports available from the Industrial Services Division, Bureau of Public Relations of the U. S. Army.

HOW TO SECURE ARMY PICTURES

EDITOR'S NOTE These official Army films are available through Army sources via 300 distributors located in nearly every major production area in the U. S. Here is the way to obtain them for your plant showings.

☆ ☆ ☆

ARMY FILMS FOR INDUSTRIAL AUDIENCES

★ Listed below are new War Department films released especially for showings to industrial war workers, in both 16mm and 35mm sound track prints. The films are provided in two categories in order to assist war plants or worker groups in assembling suitable programs. *1. Films of general interest,* which can be shown in any type of war plant regardless of the type of product they manufacture. *2. Films for specialized industries,* which are particularly appropriate for the war workers in industries for which their film content was designed.

ALL AMERICAN

Running Time—28 minutes—3 reels

• A vivid picture story of the Army Air forces in operation all over the world, taken by combat cameramen. Action shots show the All-American team of pursuit ships, bombers and transports on actual missions . . . meeting swarms of enemy fighters . . . smashing ships and shore installations with heavy bombing . . . transporting wounded men and vital materials . . . landing a division of paratroopers from the air. An absorbing presentation of the battle performance of American planes. Of especial interest is the personal report of a bomber crew to an Intelligence Officer, of its flight over Germany.

FILM COMMUNIQUE No. 1

Running Time—18 minutes—2 reels

• The first of the monthly film communiques to industrial war workers being released by the Industrial Services Division. This one consists of three parts: Little Detroit, a truck assembly plant in a theatre of operations (Africa); Landing supplies and evacuating the wounded by Air Transport Command in New Guinea: the attack on Rendova, establishment of a beachhead, landing of invasion troops and equipment, a Jap bombing attack which kills American troops and destroys a part of the material landed. (A combat film.)

FILM COMMUNIQUE No. 2

Running Time—20 minutes—3 reels

• A day with the A-36's, the new attack bomber adapted from the P-51 Mustang. Sit in the pilot's seat while ships dive through the clouds and bomb and strafe German pill-boxes. Seldom, if ever, will you be given this chance literally to be a birds'-eye witness of a modern air combat. A large section of FILM COMMUNIQUE No. 2 is captured German industrial film with eye-opening shots of the enemy's assembly lines with the original German sound track interspersed here and there with English interpretations. Every American war worker will be interested in this film.

★ The Industrial Services Division of the War Department Bureau of Public Relations has established a national distribution system of film exchanges in key cities throughout the country. The films listed in these pages, as well as many other motion pictures now in production, are especially designed for showing to war workers. The majority of these films demonstrate the relationship of the war worker to the fighting men in all corners of the globe.

War plants and labor groups desirous of showing these films should address their requests to the Industrial Services Division, Bureau of Public Relations, War Department, Washington, D. C.

Official distributors for the U. S. Army include such well known concerns as Castle Films, Inc., Modern Talking Picture Service, Inc. and Walter O. Gutlohn, Inc. Inquiry may be made to any of the local offices of these distributors as well as Industrial Services Officers located in command headquarters cities and war industry centers. Adult group audiences as well as those actually in war plants will also be given consideration on requests for these subjects, it has been disclosed.

These requests will then be forwarded to the local film distributor, who will contact your plant. Once you have made contact with this distributor all future arrangements for showing War Department films can be concluded directly between your plant and the distributor. All movies are in sound and are non-inflammable safety film.

A nominal charge of $1.00, for three reels or less in any one shipment, is allowed the distributor to cover cost of transportation, handling, insurance and maintenance. Plants or shipyards not having projection facilities may contract with the distributor for an experienced operator and 16mm projector on the following basis: continuous showings up to 1½ hours, $17; up to four hours, $25; up to six hours, $30; up to eight hours, $35.

Film exchange centers have been established in some 300 cities; however, if a plant is more than 25 miles from one of these points, five cents per mile travel charge is allowed the distributor beyond this 25-mile radius. Requests for use of film should indicate whether projection equipment is needed and whether 16mm or 35mm film is desired.

The "*Why We Fight*" Series

Produced under the direction of Frank Capra

This series is in reality a pictorial record of the events leading up to and including World War II. These are the facts behind the war—facts that will make your people realize by what a narrow margin they escaped the Nazi heel—

PRELUDE TO WAR *(Running time 50 minutes—5 reels)*
A history of events leading up to World War II.

THE NAZIS STRIKE *(Running time 40 minutes—4 reels)*
The betrayal of the small countries—and the invasions.

DIVIDE AND CONQUER *(Running time 55 minutes—6 reels)*
The fifth column within and ruthless conquest at work.

BATTLE FOR BRITAIN *(Running time 50 minutes—5 reels)*
The indomitable spirit that defied the Nazi blitz.

BATTLE OF RUSSIA *(Available after Feb. 11, 1944)*
The fighting Red Army turns back the Nazi invaders.

SUGGESTIONS FOR SHOWING IN PLANTS AND MEETINGS

★ WITHOUT EXCEPTION, U. S. war plants will find it possible to bring the men and women on their production lines these hard-hitting, realistic official Army war films. Although practically every plant offers different operating conditions, difficulties in space and motion picture projection arrangements, the Editors of BUSINESS SCREEN have listed literally hundreds of ways in which alert, aggressive plant executives have licked these seeming obstacles.

If the plant is crowded, show these pictures at evening showings to which the entire family may be invited. Add music and *very* brief entertainment to such a program and you have the makings of a very satisfying and productive evening.

But first study *all available areas* in your plant—the cafeteria, meeting rooms, storage areas, locker rooms, recreation facilities, plant aisles and, weather permitting, outdoor areas, may all be utilized for war film performances. Here, briefly, are a few of the ways in which showings may be held:

SHOW THEM AT MEETINGS

• Safety meetings, employee or supervisory gatherings in conference rooms, meeting halls, etc. For very large gatherings use 35mm projection if necessary; otherwise standard 16mm sound projectors are ideal.

BEFORE & AFTER SHIFTS

• Run a projector in the locker room, cafeteria or recreation hall for showings scheduled to end just before shift begins. Films have proved useful in stimulating prompt arrival and help prepare workers for the importance of the war job.

RENT A THEATRE OR HALL

• Many com[illegible]s have used outside facilities for showings. Ask nearby schools or theatres about available facilities.

LUNCH HOUR SHOWINGS

• Take a projector to the lunchrooms or put in plant aisles where employees may gather for voluntary showings. Make it brief.

PLANT LITTLE THEATRE

• Maintain a small newsreal theatre or cabinet-type automatic projector in the plant on a continuous basis so employees can come in whenever they choose. A short program can be repeated every 20 minutes or so.

MOBILE UNITS ON TRUCKS

• Put sound projector and amplifier on a truck and tour the plant areas. Show off the truck or in available plant space.

SHADOW BOX PROJECTION

• Illuminated areas can be used with a shadow-box type screen which shuts off most outside light. Show films almost anywhere.

Make sure that all employees are informed about these showings. Use your advertising and promotional ingenuity in stimulating attendance and interest in these restricted and official war films. After they've seen them the first time, the films will speak for themselves!

ARMY FILMS FOR INDUSTRIAL AUDIENCES

WAR DEPARTMENT REPORT

Running Time—45 minutes—5 reels

• "For the first time in its history, the War Department is making an official report on the military situation directly to the war workers of America. This is not a pep talk. It is a report by your General Staff." These are the words that Robert P. Patterson, Under Secreary of War, uses to introduce WAR DEPARTMENT REPORT to the screen. The heretofore confidential material on which the film is based was first presented in a series of highly restricted War Department Conferences to members of Congress and leaders of industry, labor and the press.

These men were so impressed with the information presented that they urged the War Department to relax security and make the facts available to every war worker in the Nation—from top executive to apprentice worker.

WAR ON WHEELS

Running Time—20 minutes—2 reels

• The story of the tank in action. See these giant behemoths battling each other. Actual fighting as seen from the inside of a tank. A battle of tanks is war on a huge scale. Steel against steel and men of steel against men of steel . . . men who have gone through grueling tests of desert heat—120 degrees outside the tank—a furnace inside. WAR ON WHEELS will certainly give you more than an eyeful of tank warfare.

BOMBERS OVER NORTH AFRICA

Running Time—19 minutes—2 reels

• Film shows preparation of the planes, briefing of the crews by intelligence officers before the raid, the bombing raid itself and intelligence interrogation of the crews on their return. (A combat film)

CHANNEL FORTIFICATIONS

Running time—6 minutes—1 reel

• The Nazis' *own film* of their fortifications along the English Channel. The film gives an absorbing picture of the lengths to which German preparations have gone and clearly indicates the problems of invasion.

LANDING IN SICILY

Running Time—6 minutes—1 reel

• An exciting short film: the official film record of the opening attack on the not-so-soft "under-belly" of Europe. Photographed under fire for the most part, it shows the amphibious attack, the initial landings and the effects of Axis counterattacks on men and materiel.

(OVER)

ARMY FILMS FOR INDUSTRIAL AUDIENCES

BAPTISM OF FIRE

Running Time—32 minutes—4 reels

• Originally produced for showing at ports of embarkation to acquaint soldiers with realistic combat problems in an attack, this film is a vivid picturization of gruesome actualities of a battlefield, and the feelings of a soldier advancing into action for the first time. (A U. S. Army Training film now released for showings to our workers to acquaint them with life and death problems of the other half of our team.)

KILL OR BE KILLED

Running Time—10 minutes—1 reel

• Realistic and earthy, this Army training film should not be shown to industrial groups without a preliminary explanation, and not until such groups have been prepared for it by seeing other combat films. Produced as a training film to acquaint soldiers with the art of hand-to-hand physical combat, it is starkly realistic and carries a jolting impact similar to *Baptism of Fire* in character, but is different in content.

COMBAT REPORT

Running Time—10 minutes—1 reel

• What American hasn't had the urge and the desire to fly an Army bomber and drop a stick of high explosive bombs on a Nazi U-boat? Well, here's your opportunity, for COMBAT REPORT will take you out to sea on a successful quest for one of these monsters of the deep. There's certainly a thrill in blasting 'em to hell and gone. Though you cannot be the actual bombardier, you can play a most important part in each of these great ventures.

LIFELINE (Note: Available early in 1944)

Running Time—20 minutes—2 reels

• This film tells the story of two battles fought at the same time. A battle against the Japs and a battle against death. We see our men go ashore in an amphibious operation. The casualties are carried back over jungle trails to emergency operating tents. One end of the lifeline is in that tent—the other is held by the hands of the men and women giving blood, processing plasma, manufacturing drugs, pharmaceutical supplies, instruments, bandages, anaesthetics. The pull of this lifeline brings our men back to base hospitals, back to health, back to the America whose freedom they fight to preserve. Narration by Ralph Bellamy.

BATTLE OF MIDWAY

Running Time—10 minutes—1 reel

• A special, edited version of the color feature of the same name. Photographed in full color, by Commander Ford of the U. S. Navy, this film shows the destruction wrought at Midway by both sides. The commentator emphasized the importance of replacing the material lost at this historic spot. Filled with exciting action pictures of Japs dive-bombing American installations and enemy planes being sent up in smoke by American marksmanship.

ATTACK SIGNAL *(Electronics—but also suitable for some general uses.)*

Running Time—13 minutes—1 reel

• An American task force attacks a South Pacific Island. During landing operations a radio set, and its production, play a crucial part in the outcome of the assault. The film emphasizes the necessity for quality in production and shows how carelessness in a plant nearly caused the annihilation of a landing force.

MOVIES SPUR PLANT MORALE

MAJOR headaches disturbing war plant executives are absenteeism and workers' decreasing interest in the war effort. Latest suggested cure — which is arousing increasing discussion and enthusiastic comment—is a daily program of movies in 16 mm size, fed to workers in the midshift as they eat their lunch.

WIDE CHOICE AVAILABLE

Such programs may consist of the usual entertainment and educational shorts, or of the incentive films put out by the Army and Navy. Newest and seemingly most successful wrinkle, however, is daily serialization of feature-length Hollywood productions. This serves a triple purpose: it provides undoubted continuity of interest; it stimulates workers, giving them needful emotional, mental relaxation; and it keeps them up with the world.

WELCOMED BY WORKERS

Swing shift workers especially find it hard to keep up regular entertainment habits—such as moviegoing—and appreciate their favorite stars being screened for them by their bosses. Many new recruits to war work, particularly women, are unused to working in long monotonous shifts. These subjects help to break the day for them, give them something to look forward to the next day.

"Midshift Movies," as they are sometimes called, also pave the way for war bond rallies and other aids to the war effort, since their distributor recommends cooperation with local movie theaters whenever practicable.

Typical film company distributing "Midshift Movies" is Films Incorporated, with offices at 330 West 42nd Street, New York City, and branch offices in Chicago, Dallas, Los Angeles and Portland. The average feature-length film is ten reels. Each reel takes approximately ten minutes to run. By showing two reels per day, therefore, a film lasts five days, keeps workers on the alert all week.

COST OF RENTALS LOW

Cost of rental is low. Serialized feature-length movies, for example, rent for $25 a week. There is no fire hazard with 16mm film. The movies are simple for amateurs to operate. Sound is as clear as on the usual 35mm film (which is what you see in movie theaters). The movies may be shown in a company's cafeteria, workshop or auditorium, if the latter is big enough. Films Incorporated has contracts with major Hollywood studios, offers a wide variety of movies ranging from Westerns to typical Hollywood love stories.

Plants already using Midshift Movies include the Columbus Bolt Works (Columbus, Ohio); the Aluminum Co. of America (Pittsburgh, Pa.); the Willamette Hyster Co. (Portland, Oregon); the Stewart Die Casting Corp. (Chicago, Ill.); the Bridgeport Brass Co. (Bridgeport, Conn.) and, on the Pacific Coast, Douglas, Consolidated Vultee, and other major aircraft companies.

G. E. war workers in the Erie, Pa. plant enjoy a midshift movie. Approved by employees and management alike for their "lift" to morale and as a cure for absenteeism, these feature films and shorts are screened for each shift in the lunchroom, cafeteria or (as below) on the plant floor.

War plant workers like Marjorie Garland, Douglas Aircraft riveter (left) and Mary Salce of Bridgeport Brass (right) share the enthusiasm of fellow workers for movie showings.

What do the workers themselves say about these plant showings of motion pictures? A poll taken at the Western Electric Company's Hawthorne plant showed widespread enthusiasm for the idea. Other companies, notably Carnegie - Illinois Steel, Stewart Warner, Packard, Douglas, Bridgeport Brass and General Electric to name a few of the thousands now showing these films, have found their workers highly in favor of varied but regular film programs.

REALLY CHECK ABSENTEEISM

One of the industry's suppliers of visual equipment checked the use of the medium in its own plants (see page 28) and found a definite trend against absences on the days when films were shown. A distributor of entertaining shorts reports that workers ask for serialized mystery stories and short subjects.

Widely used throughout the U. S. are the inexpensive 16mm sound subjects produced by organizations like Castle Films. These include up-to-the-minute war reports on the battles of the Pacific, Russia, Africa and Sicily as well as human interest subjects and cartoons. (See REVIEW.)

BALANCE THE PROGRAMS

Too great a percentage of entertainment or too many battle pictures on a single program or in a single series of showings apparently reduces the effectiveness of the idea. Balanced programs, introducing entertainment material helps to relieve the tensions and strains of the production line while the use of official war films and news reports helps keep the worker impressed with the importance of the war production job at hand.

Projection facilities are now widely available everywhere in the U. S. Plants may also purchase 16mm motion picture projection equipment through special permission granted by the W.P.B. Form 1319 is used for this purpose.

All kinds of adverse plant conditions have been successfully overcome in showing these films. Expert counsel from local projectionists and from film distributors is always available without obligation. The shadow-box screen is one of most useful means of overcoming light conditions, the most general handicap.

Composite montage of scenes in the new Castle release **News Parade of the Year** now available for plant showings at economical cost.

News Parade of the Year Is Announced by Castle

★ Evidence that Army and Navy authorities recognize the importance of keeping the armed forces accurately informed on world events is shown by the orders for hundreds of prints of Castle Films' *News Parade of the Year* to be delivered in New York and San Francisco. These are main embarkation ports, of course, and it is plain that fighting men at sea and on distant foreign shores are going to see this home movie. It tells the soldier or sailor isolated from all theaters except his own what his buddies-in-arms have been doing.

Here, of course, in America, collectors again have demonstrated that their numbers have grown until it requires more than five million feet of 16mm film just to supply them with *News Parade*. It is believed that the widespread ownership of this film record of historic events may wield an influence on national thinking during the years that follow the end of the war. Certainly, it will be difficult to spread successfully the type of postwar propaganda which distorted facts and confused minds after the first European struggle.

Too many owners of 16mm projectors will have an unbiased record of what actually happened, from 1937 to the present time. No other war in history has been pictured in movies for civilian ownership. It is, therefore, reasonable to believe that this war will be far more accurately discussed by the coming generations.

REVIEWING THE 1943 NEWS PARADE

BATTLING THE U-BOATS! The combined Allied Navies still fight to clear the Atlantic of harassing Nazi wolf-packs by crushing sea and air weapons. A U-Boat, unaware of the presence of a U. S. Coast Guard cutter, is trapped on the surface and destroyed. Every day our heroes in planes and ships send more undersea raiders to the bottom. TRAGEDY AT TOULON! The mighty French Fleet, not heeding the Allies' plea to escape before too late, is scuttled to prevent its falling into Hitler's hands. The seizure of the Normandie by the U. S.

—1941—fire all but destroys it—1943! Almost by miracle, the great ship floats again.

PACIFIC FORCES ADVANCE ON THE JAPS

MacARTHUR'S SMASHING OFFENSIVE! General MacArthur personally commands the terrific struggle as American airpower blasts the Japs in the South Pacific. Lead by the famous general, our forces continuously harass the enemy, driving them further back and back. . . . In North Burma, Gen. Joe Stillwell moves in his American-trained and equipped Chinese forces to hold the line until Burma can be retaken. He fights on and trains a growing army to avenge previous defeat by the Japs. ARGENTINA REVOLTS! The city of Buenos Aires roars with rioting as Army over-

throws government. An overwhelming majority of people seek closer hemispheric ties.

ALLIES INVADE THE FORTRESS OF EUROPE

ALLIES ON THE MARCH! President and Prime Minister meet at Casablanca to plan unconditional surrender for the Axis.—Tripoli falls, ending Mussolini's Empire—Montgomery's heroic army chases Rommel from Egypt as Allies take over control of North Africa—Sicily, a short leap from Tunisia, is the next objective to fall to the combined power of battle—tested Americans, British, Canadians and French. From there the American Fifth Army invades the Italian mainland, and fighting street by street, town by town, moves forward. Italy

surrenders, Salerno is won—the Allies surge on, capture Naples and march toward Rome.

BOMBS RAIN AS OUR AIRMEN RAID BERLIN

BOMBS OVER HITLERLAND! The ever increasing Allied air offensive rocks the Nazi homeland from border to border, reaching a terrifying peak such as the world has never known. The staggering weight of growing American air power hastens the day of victory! RUSSIA'S MIGHT ASTOUNDS THE WORLD! In a smashing offensive sustained for months at tremendous tempo, Red Armies sweep the Nazi invader from the Ukraine in the greatest defeat yet suffered by Germany. A staggering blow to Nazi hopes of Allied disunity

is contributed when Secretary of State Hull flies to Moscow—a historic prelude to Victory!

Filming a training subject on auxiliary machine foundations. The R. C. M. production staff and shipyard supervisor are glimpsed in action on the deck of a ship at the outfitting wharfs of the Consolidated Steel Wilmington yards.

Films Speed the Ships

WEST COAST SHIPYARDS SCENE OF PRODUCTION

FROM VANCOUVER to San Diego, wherever the shipyards are turning out the bottoms on which our lifelines of the Pacific and the Atlantic are sustained, the motion picture and the slidefilm are coming into their own in training, safety and morale programs.

The largest of the visual production schedules now under way is that of the U. S. Office of Education where a second great series of films on *Shipbuilding Skills* is now nearing completion. The first series, which dealt with ship construction detail, was produced in East Coast yards by Caravel Films, Inc., and the Jam Handy Organization. The current films are in the areas of *Marine Machinery Installation, Coppersmithing, Pipefitting* and *Marine Electricity* and are being produced by R.C.M. Productions, Gene K. Walker, Photo & Sound, Inc., and Hugh Harman Productions, all West Coast organizations.

FIRST SERIES ARE READY

The series on *Marine Machinery Installation* as well as other subjects in *Pipefitting* are soon to be announced for sale through the official distributors, Castle Films, Inc. These include titles such as *How to Check and Surface Foundations, Aligning and Installing Auxiliary Machinery, Filing and Installing Chocks, Laying Out, Drilling and Tapping Flanges on Sea Chest, Installing Valves and Sea Strainer on Sea Chest* and other installation subjects.

The new films are part of visual aids units, each of these include a sound motion picture, silent filmstrip and an instructor's manual. There are approximately twenty-five such units in the field of Shipbuilding Skills on the current U. S. Office of Education production board.

OTHER PRODUCTION ACTIVITY

The U.S.O.E. program serves to provide general educational materials for the yards. Specific and localized visual aids are also widely employed. Marinship at Sausolito, California and the Kaiser Company, Inc., at Portland, Oregon are typical examples of this specialized approach. Both use slidefilms extensively. Strip films are localized to the special situations and methods of the Kaiser yards under the direction of Maurice Bullard, supervisor of vocational training for the Company in the Portland area. Leonard Delano, commercial producer in this Northwest territory, is material supervisor and photographer.

By means of individual still pictures of step-by-step operations, Delano arranges complete sequences on special subjects. Material expediting, construction details, and operations by various craftsmen are thus presented to the training classes.

BAY AREA IDEAL LOCATION

Photo & Sound, Inc., San Francisco and other Golden Gate producers have contributed many special films for the yards in that area. These cover subjects from *Blueprint Reading* to advanced construction and are supplied complete with utilization manuals.

Projection of the visual training aids is carried out by means of class groups, for the most part, although frequent mass gatherings of workers have seen war incentive pictures and special programs such as safety and health subjects. Supervisory subjects such as the Vocafilm series on *Supervisory Relations* are also widely employed for education work in that critical field.

Safety in Wartime

★ NEEDLESS WASTE of manpower and time through preventable accidents helps the enemy. To that end, safety education in wartime is a "must" in war industry and in the armed services as well.

Two recent sound slidefilms are helping the armed forces move the vital materiel of war with increased effectiveness. These are *The Know-How of Stevedoring* and *The Know-How of Handling Freight in Warehouses*. Both were produced for the U. S. Army in collaboration with Liberty Mutual Insurance Company.

PREVENTING HIGHWAY ACCIDENTS

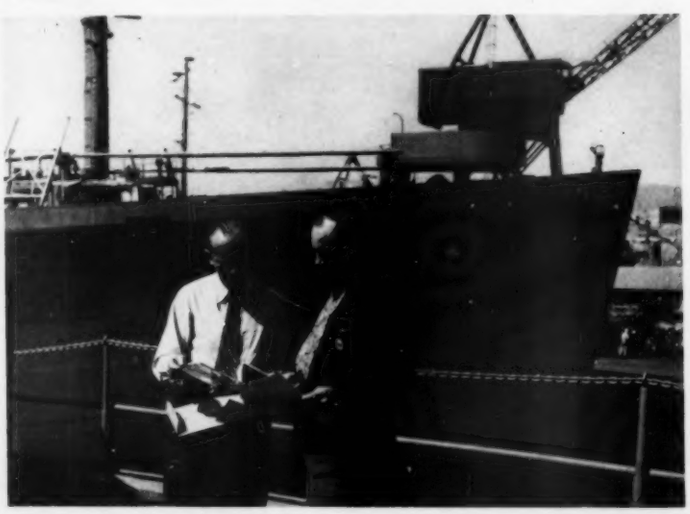
A common cause of fatal accidents is careless walking along the open highways, particularly now that many service men are traveling from camp areas to nearby towns and cities. The San Diego (Cal.) Naval Training base is meeting this problem with a sound slidefilm *Death Walks the Highways*. Copies of this subject, which was produced with the cooperation of the San Diego Police Department, are on deposit at the national headquarters office of the National Safety Council in Chicago, available for loan without charge to local safety councils and to military and naval establishments interested in installing a program of this type.

OTHER NEW SAFETY FILMS

New sound slidefilms on fire prevention and on the safe operation of overhead cranes as well as sequel to *Nothing Upstairs*, a previous Safety Council subject, are now being announced for distribution.

R. C. M. production unit, with a group of California state educators, during the filming of marine machinery films for the U. S. Office of Education at the Consolidated yards.

Ben Hersh, president of R. C. M. Productions, confers with Franklin B. Judson, during production of Shipbuilding skills training series at Consolidated.



BASIC AERONAUTICAL RESEARCH in the laboratories of the National Advisory Committee for Aeronautics at Langley Field, Va., uses Ciné-Kodak to study airfoils and air currents—through "smokeflow movies" made in wind tunnels—and fuel combustion in aircraft engine cylinders. These movies, showing what the eye can't see, lead to design refinements—in aircraft and engines—which "pay out" when the guns begin to chatter or the bombs find their mark.

KEY TO SECRET WEAPONS ...a movie camera—

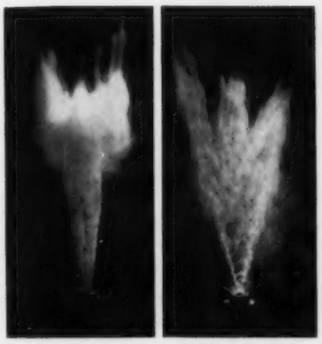
Ciné-Kodak—which stretches split-seconds into minutes

"WORKING BLIND" . . . trying to improve a plane or gun or projectile which moves so fast you can't see it . . . is necessarily a slow, fumbling business. In time of war, not good enough . . .

Fortunately, back in 1932, Kodak made available to our best engineering and scientific brains a new kind of eye . . . which could *see* what goes on at blinding speed in our mechanized, electrified world.

This eye was a movie camera for taking thousands of pictures *a second*—which could then be shown at normal movie speed of 16 pictures a second. It "magnified time." In the resulting movies, action which had actually occurred in a split-second was stretched into minutes.

Research scientists used these cameras to help develop faster airplanes, more powerful motors. And, with the approach of war, to find out why a machine gun "jammed"—and fix it; to "take the bugs out" of the recoil mechanisms of bigger guns; to pack a more effective "train of fire" into a contact bomb . . . examples are numbered in hundreds.



NOT "OLD FAITHFUL," but "stills" enlarged from movies made at 2500 pictures a second, showing the comparative efficiency of two designs in fuel injection jets. The superior distribution of fuel from the jet at the right—invisible without the movies—is the type of small improvement which helps our men write America's fighting record in the air.

Your 16-mm. home movie Ciné-Kodak was the "jumping-off place" in designing Eastman's super-speed movie camera, which takes 3,000 pictures a second—the film streaking through at over 50 miles an hour. The "shutter" is a spinning "prism"—speed 90,000 r.p.m.

At this incredible speed, this Ciné-Kodak makes good movies—with standard 16-mm. films, Kodachrome included, and has become a most effective military tool . . . Eastman Kodak Co., Rochester, N. Y.

REMEMBER MAJOR HENDERSON? . . . *how Major Lofton Henderson, USMC, flew his crippled bomber right down onto the Jap carrier's deck? And how his name was given to that bomb-scarred field on Guadalcanal? It is a stern example for us at home.*
BUY MORE WAR BONDS.

Serving human progress through Photography

A New Way to Say

Happy New Year

Say it with increased action, with redoubled effort — and it will be a Happy New Year for all of us.

To our old friends and customers, a special greeting: Thanks for understanding our facilities are All Out for Victory. In this way, we can look forward sooner to renewed association.

To those whose products or services are used in the War Effort, we say: You can better train the Production Front Workers with well planned motion pictures. Let us show you why and how.

RAY-BELL FILMS, Inc.

2269 FORD PARKWAY **ST. PAUL, MINN.**

Above: Scene from picture **Passing the Know-How Along** (Jam Handy).

SLIDEFILMS AID PRODUCTION

BY LYNE S. METCALFE

THE PRIMARY OBJECTIVES of methods engineering studies in industry are, first, to increase the productivity of machine and operator, second, to determine the point and degree of fatigue both of which factors must be kept in proper balance if the fullest efficiency is to be attained. The elements of this science have been greatly complicated in war production because of the fact that the percentage of "green" help has risen so greatly, and the production program has increased demands in the way of speed — which remained largely a secondary factor in peacetime production.

In approaching experiments and applications of modern methods engineering the objectives are:

a) Time study
b) Analysis of operations
c) Motion study

TIME LOST AT OUTSET

A very large percentage of war workers spend a far too large a percentage of their training time in learning *fundamentals*, in getting an understanding of the character and purpose of the equipment and machines they are destined to operate, and in this new field the slidefilm is rapidly taking an increasingly important place. While various types of special motion pictures have been widely and successfully used in methods engineering, only recently has the full value of the discussional type slidefilm been recognized.

Recent experiments have been revealing.

In the heavy machining field, for instance, equipment itself is usually scarce and seldom free for training or pre-training purposes, and likewise too heavy and immobile to utilize within a classroom. Yet, the primary steps in familiarizing operatives with their equipment and its purposes is that which shows them what the machine looks like, what it does, and the simple techniques of operation—in advance of actual shop demonstration and practice under supervision. It is in this field that selected slidefilms are doing a job.

FAMILIARITY WITH DETAILS

So, when the operative has once seen a slidefilm or series say on machining or benchwork, and later moves on to actual aisle practice he knows what the equipment is like, something of how it works. And when in time and motion study he is told to perform such actions as "bring up tool and engage feed," he knows what it is all about. He can more easily picture in his mind the loading of a piece, etc.

In other cases, where a machine is making a cut under power feed, he knows what to do with the resultant idle time because all that has been studied in advance by means of pictures.

WORK WITH TIME STUDIES

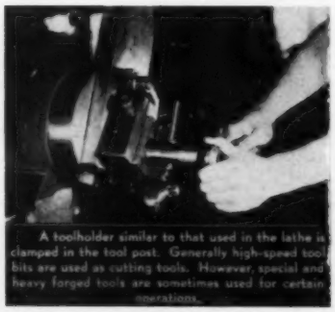
Slidefilms of the tooling, benchwork and machining type have been found to integrate very readily with time studies, analysis sheets and motion studies which are often made and used by the learners themselves. These studies have added greatly to the interest of learners in indus-

try because they interestingly analyze basic operations — something new and actually fascinating to the newcomer. This material usually is the basis of class discussions on the number, sequence and character of motions to perform a given cycle.

Use Films Early in Course

It is customary in using slidefilms for this type of training and analysis work to introduce the pictures early in the course in a quiet classroom where learners can concentrate and focus attention on the large illuminated images and make notes during and after general discussion. The discussional or reading type of slidefilm has been found superior for time and motion study work because of its greater flexibility and power to provoke and sustain discussion of vital steps and processes as well as parts and functions of machines and the formulas for their efficient use.

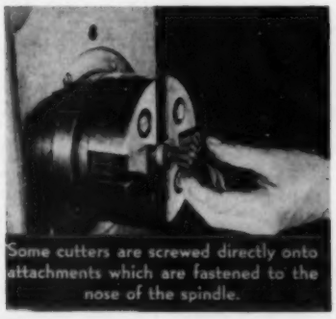
Generally speaking, in the machining field such a course—starting with totally inexperienced help, requires twenty weeks, sometimes less, sometimes more depending upon local conditions.


A toolholder similar to that used in the lathe is clamped in the tool post. Generally high-speed tool bits are used as cutting tools. However, special and heavy forged tools are sometimes used for certain operations.

Machines and machining films tie-in with analysis sheets.

Never clamp aluminum alloy in a vise without protecting it with clean face pieces made of either wood or aluminum. Steel vise jaws will make dents and scratches because they are so much harder than even the hardest aluminum alloy.

Pictures like this help teach fundamentals more rapidly.



The learner unacquainted with the machine learns what it does and how it does it—more quickly by pictures.

It will be recognized that the steps saved in the use of screen images tend to reduce the time it requires to fit the green worker for the bench or lathe is immense. The alternative, of course, would be the more tedious and expensive procedure of starting at scratch—at the machine itself—a system seldom practicable in a multiple shift operation.

Visualize The Invisible

The available benchwork, tool, and machining slidefilms freely utilize the closeup type of scene to depict the machine's functions and parts and purposes for the beginner which is, perhaps, solving half of the problem of completely learning the techniques of actual operation. Pictures permit cross sections and reveal details often unseeable at the machine itself, and the learner grasps these fundamentals of construction and function at his or her ease—in the quiet of the classroom.

Deal With Fundamentals

The slidefilms most commonly used for time, motion and analysis study work have been flexible enough to suit the particular situation in any plant because they deal with *fundamentals* and permit the leader or instructor to integrate the immediate local approaches of the job in his own words and in his own way.

Two Kit-sets being widely used in this field are:

The Bench Work Kit-Set

This kit-set includes the following subjects: 1. *Tools;* 2. *Hand and Power Hack-Saws;* 3. *Drills and Drilling;* 4. *Reaming, Tapping and Threading;* 5. *Finishing Rough Castings;* 6. *Scraping;* 7. *Rivets and Riveting;* 8. *Layout Tools and Measuring Instruments;* 9. *Layout Work,* Part I; 10. *Layout Work,* Part II.

There is a total of 874 individual pictures in the benchwork series. 701 individual pictures are included in the 16 slide-films on machining, including the following phases:

1. *The Machinist;* 2. *Machine Tools;* 3, 4. *Machine Technique* (parts 1 and 2) and 5, 6. *Measuring and Measurements,* Parts 1 and 2. Slidefilms on the drill press, grinding machines, lathes, milling machine, shapers, planers and specialized machines are also included.

How Steel got fighting mad!

The back-of-the-lines story of a basic industry at war is told in an exciting motion picture . .

"TO EACH OTHER"

THIS PICTURE takes you on a tour of steel plants all over the country. Shows old and new mills rushed into service to meet the terrific demand for steel. Singles out improved processes of steel-making inspired by war needs.

Scenes for this action-packed picture were photographed against a background of flaming furnaces, thundering mills and giant shipyards. The workers shown are men and women playing their real-life roles. As the picture unfolds, the story of 'To Each Other" is told by a famous Hollywood character actor—a story of fathers and brothers, of wives and sisters, and the steel they make for fighting weapons to back up their fighting men.

You'll see them spin a big steel tube into a bomb—and do it ten times faster than ever before. You'll watch the fashioning of intricate springs that make a machine gun chatter. You'll be fascinated by the sight of great ships fabricated on a production line. You'll see four great destroyers launched at one time from a single shipyard!

Available for Group Showing . . . at No Charge

More than a hundred war-born miracles of steel make "To Each Other" a picture of thrilling entertainment—as well as an important part of the education of everyone who cares about winning the war.

This 35-minute film will be loaned at no charge, for showing before employee groups, clubs, or any professional, civic or fraternal organization. Why not suggest that your program committee arrange to show this picture! Send the coupon below for application blank and illustrated folder.

BS

United States Steel
Room 1650, 436 Seventh Avenue
Pittsburgh 30, Penna.

Please send, at no obligation, illustrated folder describing new 35-minute motion picture, "To Each Other"; also application blank with which to order this free film.

Name.....

Organization.....

Address.....

City..... State.....

UNITED STATES STEEL

Workers at the Lincolnwood plant of Bell & Howell turn out in full force to see movie serials at noon-hour showings.

FILMS CUT ABSENTEEISM IN WAR PLANTS

THE EVER-POPULAR SERIAL thriller, so dear to our youth, has grown up and gone to war. Having brought people back to theatres for each succeeding week's chapter of breath-taking episodes serial films, together with other movie fare and war films, are now bringing workers back to war plant showings with astonishing regularity.

These war plant showings are doing a great job in plant recreation and employe morale programs. Pictures screened at recess showings, to early arrivals just before each shift goes on and at lunch hours, both relax and stimulate the workers and help immensely to prepare them for the work period ahead.

SERIALS MUST HAVE SOMETHING

Serial episodes have been added to these plant programs and, according to Bell & Howell, manufacturers of motion picture equipment and optical devices, they outshow any other type of films used in their own plants. On the two days a week the serials are shown, the movie audience is double that which turns out for any other film and the factory theatre is crowded far beyond the door.

Titles like *Flash Gordon* and *Riders of Death Valley* share in popularity with half a hundred modern serial "thrillers" available from film library sources on a rental loan basis.

ACTUALLY REDUCE ABSENTEEISM

At the B & H plants, the serials are shown on Mondays and Tuesdays, usually the worst days of the week with regard to absenteeism. In fact, absenteeism on these two days has been reduced by fourteen per cent in comparison with a ten-week average before the serials were introduced.

Filmosound library facilities, the Bell & Howell film source widely used for educational and recreational programs, has a wide selection of subject matter especially selected and available to all other war plants. Library catalogs and special supplements list many serials and other suitable pictures, including official war films, from which programs may be selected at economical rental and handling costs. An exclusive feature of this film service is that all serials, since the outbreak of the war, are marked so that a chapter can be split over two days' showing, allowing not more than ten minutes of film for each break period.

AUDIO PRODUCTIONS INC.
PRODUCER OF SOUND MOTION PICTURES

☆ ☆ ☆ *IN STEP*

. . . with a permanent and growing staff, complete facilities and the experience of years in the production of films that do their jobs well—these are AUDIO assets which answer the call of INDUSTRY and GOVERNMENT for services urgently needed in those all-important tasks of training on every front.

AUDIO PRODUCTIONS, INC.

630 Ninth Avenue • New York City
Film Center Building

U. S. Steel Plants See Official Army Pictures

♦ Through the courtesy of Gen. Henry S. Aurand, commanding the Sixth Service Command, previously-restricted War Department motion pictures now are being made available to the thousands of men and women employed in the Chicago district plants of United States Steel Corporation subsidiaries.

In Chicago, Gary, Joliet and Waukegan, the industrial relations departments of the subsidiary companies are undertaking systematic showing of the films so that the maximum of war workers in their respective plants and their families may have the opportunity to see the war pictured realistically. In some instances the films are being shown within the plants while in others the showings are being sponsored in the communities.

The Foremen's Club of Gary Works, Carnegie-Illinois Steel Corporation, is sponsoring the showing of the films to employees and their families of this largest steel plant in the world. The Foremen's Club maintains clubrooms in the Hotel Gary. New War Department films are to be made available for such showings as soon as they are released so that a regular schedule may be maintained.

"World Series" Available

♦ The official films of the 1943 baseball classic, *The World Series*, as produced by the American League of Professional Baseball Clubs in cooperation with sponsors, are now available for limited civilian distribution through the League's headquarters office, 310 S. Michigan Blvd., care of Lew Fonseca, Promotional Dept., Room 2420, Chicago, Ill.

SAFETY FOR WAR WORKERS

★ Figures reveal that each year in American Industry workers suffer 300,000 eye injuries, many of which incapacitate the operative, and result in a loss to employers of something like $200,000,000. Safety goggles are designed to give the worker protection from eye hazards, and they do, but — too many workers wear their safety goggles over the forehead, or hang them on a convenient nail while at work.

The reason for this practice has been found to be — not in the goggles themselves but in the fact that too often they are uncomfortable, and discomfort influences the worker to lay them aside at every opportunity. This situation is well known to every foreman, safety engineer and personnel manager in industries where eye hazards prevail, but many of them are not aware of the true causes.

Jam Handy, Detroit, has produced for The American Optical Company a 14 minute sound motion picture, the purpose of which is to show easy ways to select non-prescription safety goggles that fit, and then how to make sure that they fit the facial characteristics of the individual worker who wears them. The picture *Right on the Nose* has a screen time of 14 minutes, and 16 mm prints are loaned free to any employer interested. Copies for permanent use are supplied at $25 each.

The war and war production has greatly increased the use of safety goggles in factories and plants where eyes are exposed to flying chips, ultra violet and infra-red light rays, sand, dust and chemicals. But goggles are of no use when the wearer lays them aside. While discomfort is perhaps the main cause of this delinquency, poor vision as a result of improperly fitted goggles is also responsible. The film is directed to those responsible for eye protection in the plant — including safety engineers, personnel people, nurses and foremen.

Amplified by a running commentary and snatches of dialog recorded on the film, closeups are used effectively to show the step-by-step process of properly fitting of the spectacle and eye-cup type goggles.

The picture is strictly an educational, containing no advertising whatsoever. Prints may be borrowed by addressing The American Optical Co., Southbridge, Mass.

S. V. E. Projectors Available

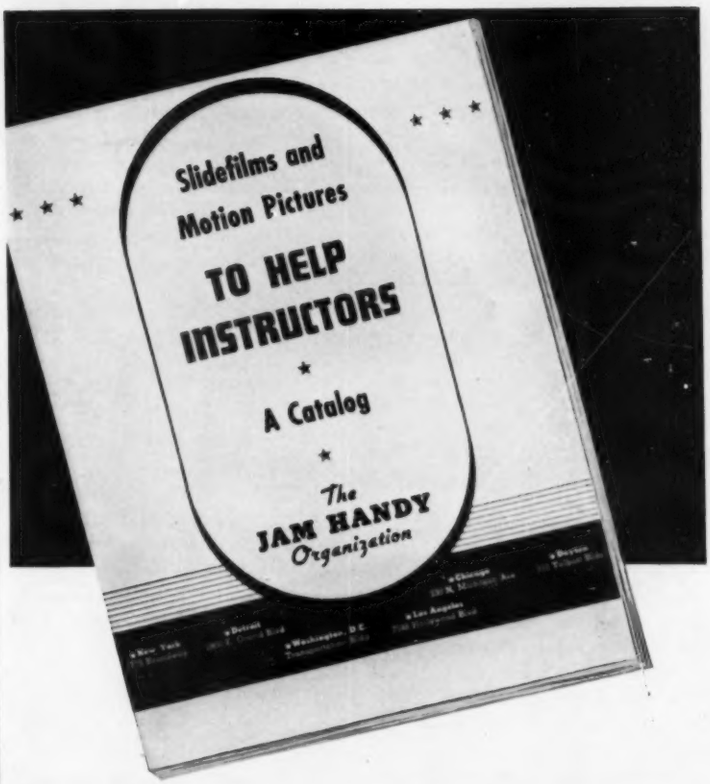
★ The entire line of S.V.E. Projectors is now available, under L267, for purchase by essential civilians.

S.V.E. Tri-Purpose Projectors, Model DD-150 watt and AAA-300 watt, show both single and double frame slidefilms and 2″ x 2″ slides in either Kodachrome or black-and-white; these models are ideal for educational institutions. The Miniature Projector, Model AK, is widely used by lecturers and others using 2″ x 2″ Kodachrome slides.

Besides these models, S.V.E. also manufactures three Projector Models, Q, F and G, which project slidefilms exclusively and are especially adapted to industrial and commercial purposes. These slidefilm Projectors are 100-200 and 300 watt respectively and are used in all leading sound-slidefilm units.

Prospective purchasers of Projectors are required to file a WPB-1319 application, in triplicate, with the Photographic Division, Consumers Durable Goods, War Production Board, Washington, D. C. Further information may be secured from any S.V.E. dealer or from the Society for Visual Education, Inc., 100 East Ohio street, Chicago (11).

The "SRO" sign is needed when serials are shown to workers at the B & H Rockwell plant, 100% engaged in war production.



84 Pages of Visual Aids Visually Portrayed

This new Jam Handy catalog presents a wide selection of visual aids. In its 84 pages you'll find descriptions of 22 slidefilm Kit-Sets, 491 individual slidefilms and 44 educational motion pictures. For easy reference there are two indexes—one by film titles and the other by teaching subjects.

This broad range of helpful material is available now for instructors with heavy teaching loads, for teachers who are called upon to handle new subjects and for schools and industries which have a program of vocational training to carry.

Jam Handy slidefilms and educational motion pictures are helping thousands of teachers in every state and in many foreign countries. Please send for your copy of the catalog today.

The **JAM HANDY** *Organization*

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OWI WAR FILM GROUP MEETS

REPRESENTATIVES of eight national organizations comprising the newly created National 16mm Motion Picture Advisory and Policy Committee of the Office of War Information met in Washington on November 16, 1943. The Committee urged the full utilization of the existing mass media—print, radio, and motion pictures—to provide the public with complete and accurate information on war issues and war problems.

The Committee met with Stanton Griffis, Chief, Bureau of Motion Pictures of the Office of War Information, and C. R. Reagan, Head, Non-Theatrical Division, and with members of the Bureau Staff as well as representatives of other Federal Agencies.

CONCLUSIONS ARE GIVEN

The Committee, declaring its function to be to express broad and general policies believed to be in the interest of the most effective production and utilization of 16mm films in disseminating war information, reached the following conclusions:

1. While the limited number of 16mm war information films available from war agencies have contributed to a better understanding of war problems and issues, the schools, churches, lodges, men's and women's clubs, labor and industrial organizations, and other educational, civic and cultural groups owning over 25,000 sound projectors demand more factual films which treat in a more realistic fashion combat reports, war bonds and inflation, manpower and increased production, health, conservation, and salvage, food and nutrition, juvenile delinquency, and other vital war problems.

2. To achieve maximum effective distribution and utilization on a nation-wide basis, and avoid confusion, contradiction and duplication, all official government war films for the civilian home front should be channeled through the Office of War Information to all existing 16mm distributors on the same non-exclusive basis as used in the distribution and dissemination of official war information through 35mm films, press, and radio.

INTENSIFIED USE URGED

3. An intensified use of non-theatrical motion pictures and complete mobilization of all 16mm sound projectors in the nation for the war information program were recommended. Since records for the past sixteen months prove conclusively that those states which have set up statewide organizations including state and local war film coordinators have achieved best results, this Committee recommends that this procedure be extended to other states. The Office of War Information, the eight national associations represented here, and all distributors of war films should make every possible effort to inform the American public more fully of the availability of non-theatrical war films through the press, radio, house organs, and posters.

4. Public libraries and other civic leaders should encourage war film forums. Suggested plans and procedures on film forums should be widely distributed.

5. Since the U. S. Government is about to launch the Fourth War Loan Drive, it was resolved unanimously that the agencies represented contact directly and through their membership all distributors of 16mm films throughout the country, and urge each of them to cooperate to the fullest possible extent with local War Bond Committees in supplying them with films, projectors, and projectionists to increase payroll deductions and to sell more and more bonds. It is further resolved that a copy of this resolution be sent to Ted R. Gamble, National Director, War Finance Division, U. S. Treasury, and that sufficient copies of this resolution be supplied to the War Finance Committee of the U. S. Treasury to send to its 81 offices throughout the country.

6. The Committee further recommends that OWI provide distributors with appropriate trailers or news bulletins on urgent war issues to be attached to programs designed for general audiences.

7. It further recommends that the necessary number of prints of selected government war films remain with distributors for historical reference, and that lavender duplicating prints be made and stored in vaults for the purpose of making negatives and prints therefrom at any time in the years to come.

8. To provide for the most effective use of war films and to minimize any curtailment of distribution and utilization, this Committee recommends that the existing service charge be reexamined by the Office of War Information. Recommendations resulting from this survey are not to become effective before July 1, 1944.

COMMITTEE MEMBERS NAMED

The members of the Committee attending and the organizations which they represented are as follows: L. C. Larson, Chairman, Educational Film Library Association. Indiana University, Bloomington; W. K. Hedwig, Allied Non-Theatrical Film Association, New York City; Miss Mary U. Rothrock, Audio-Visual Aids Committee, American Library Association, Knoxville, Tennessee; J. M. Stackhouse, National Association of Visual Education Dealers, Richmond, Virginia; Bertram Willoughby, National War Committee for Visual Education Industry, Chicago; George B. Zehmer, National University Extension Association, University of Virginia, Charlottesville.

The above named persons including Mrs. Camilla Best, Department of Visual Instruction, National Education Association, New Orleans, and O. H. Coelln, Jr., Editor, BUSINESS SCREEN, Chicago, who were unable to attend, constitute the National Advisory and Policy Committee, composed of the heads of the eight national associations concerned with the distribution and use of 16mm motion pictures. Mrs. Best was represented by Miss Helen Hardt Seaton, American Council on Education, Washington, D. C. Miss Mildred Batchhelder, American Library Association, Chicago, also attended.

A special luncheon program in honor of this Committee was arranged by the Washington War Visual Workers at their regular weekly luncheon on November 16th. Representatives of the various branches of the Federal government and the United Nations participated.

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QUALITY

motion pictures since 1923

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EQUIPMENT NEWS & COMMENT

DeVry Releases Its Patents To Meet Armed Forces Needs

IN OBSERVANCE of the 30th anniversary of its founding, and the 67th birthday anniversary of the late Dr. Herman A. DeVry, its founder, DeVry Corporation, Chicago, announces the conclusion of arrangements whereby several of its patented projector mechanisms are released for manufacture for the Armed Forces.

TO MEET WAR DEMANDS

DeVry's president, W. C. DeVry, explains the corporation action in the fact that the U. S. Army, Navy and the British Admiralty need patented DeVry equipment in larger quantities and at a rate of production in excess of one company's capacity to produce. Rather than expand its own facilities at the expense of time, critical machinery and government funds, DeVry released its patents to subcontractors royalty-free for the duration. DeVry is currently celebrating the receipt of a white star for its Army-Navy "E" pennant, indicating continued excellence in producing motion picture sound equipment and electronic training devices.

FOUNDED THIRTY YEARS AGO

DeVry Corporation was founded 30 years ago—in 1913—by Mr. DeVry's father as an outgrowth of his development and manufacture of the world's first portable motion picture equipment—a 35mm "suitcase projector," which Dr. DeVry designed and built to take the entertainment and teaching benefits of motion pictures out of the theatre to the crossroads and classrooms of the world.

In addition to being responsible for many important developments in motion picture projector design and manufacture, Dr. DeVry was also a pioneer of visual education by means of motion pictures, which authorities agree are speeding troop training 40 per cent, and materially accelerating the schooling of production workers on new skills and techniques.

ON S. M. P. E. HONOR ROLL

Dr. DeVry was born on November 27, 1867. He died in 1941—the fifth American and the first Chicagoan to be awarded a place, with Thomas A. Edison and George Eastman, on the international honor roll of the Society of Motion Picture Engineers.

New Eastern Headquarters for Victor in New York

♦ The new office quarters, projection salon, and service department of Victor Animatograph Corporation's New York City Branch is now located right in the "heart of Manhattan" — convenient to subways, surface lines, railroads and parking facilities.

Hundreds of new users of Victor motion picture equipment have so taxed the former facilities that these new and finer quarters were deemed necessary. The popularity of the Victor line among military, industrial, school and other types of users, especially during this war emergency, has brought many new requests to Victor for advice and guidance. To these hundreds of new users' needs Victor has responded with the finest facilities now available on the East Coast.

FACILITIES FOR PROJECTION

Anyone in need of projection facilities while in New York City is cordially invited to make use of the new 16mm projection salon.

Mr. Horace O. Jones, the Eastern Manager for Victor, is already established in the new quarters and is completely equipped to give all types of assistance in connection with 16mm Motion Picture Equipment and visual and audio-visual communication. He invites your early inspection.

The new Victor telephone number in New York City is LOngacre 3-2265; 3-2266; 3-2267—the new address is McGraw-Hill Bldg., Suite 2715, 330 W. 42nd St.

An Essential War Film

♦ *Save Those Tools* is the title of a one-reel, black and white, sound motion picture now being distributed by the International Harvester Company, 180 North Michigan Avenue, Chicago, Illinois. The picture shows how this particular company's own tool salvage program was organized and its functioning methods, from salvage at individual plants to the central clearing house for the utilization of excess and obsolete tools. Emphasis is given to a low-temperature brazing process of repairing broken or damaged tools of various kinds, including reamers, drills, slitting saws, broaches, hobs, and milling cutters. Regrinding of tools to smaller sizes or reworking to different types is also treated.

Now Available in 16MM Sound Film

Acclaimed by American critics and theatre audiences as

ONE OF THE GREAT BATTLE PICTURES OF THE WAR

➡ *Desert Victory* is a British documentary sound film made under fire. It captures the full impact of modern warfare, and dramatically records the British Eighth Army's smashing victory at El Alamein and its triumphant 1300 mile advance across the desert to Tripoli.

➡ *Desert Victory* shows how the Royal Engineers went ahead to clear the deadly mines, the vital part the General Sherman tanks played and how the infantry, the armored divisions, and the air force worked together to shatter Rommel's best Panzer troops.

➡ Produced by 26 battle photographers and six officers, *Desert Victory* cost the lives of four cameramen, while seven were wounded and six captured.

➡ Progress and tactics of the battle are shown by means of maps and commentators.

Sale price $66.50 • *Rental $2.50* • *62 mins.*

Many other films available, including four new features:

SILENT VILLAGE **WORLD OF PLENTY**
I WAS A FIREMAN **BEFORE THE RAID**

WRITE FOR CATALOG, FILMS OF BRITAIN AT WAR

BRITISH INFORMATION SERVICES
An Agency of the British Government

30 Rockefeller Plaza, New York 20, N. Y.
360 North Michigan Avenue, Chicago 1, Ill.
260 California Street, San Francisco 11, Calif.
1005 Taft Building, 1680 North Vine Street, Hollywood 28, Calif.
1336 New York Avenue, N.W. Washington 5, D. C.
1238 Canal Building, New Orleans 12, La.
OR ANY BRITISH CONSULATE

(CONTINUED FROM PAGE 18)

with other threads, and shows how to cut it on a lathe. Also shown are how to set up for thread cutting, how to check the shape of the threading tool with a gage, how to set the tool, and how to use the thread dial indicator. Slow motion is used to emphasize the skill required when releasing the threading mechanism and backing off the tool from the cut. The use of the thread pitch gage to check the pitch of the thread and the use of the thread micrometer to measure the diameter of the work are demonstrated. The film closes with a review of the important steps to be followed.

Jobs 6-H and 7-H required turning of tapers by methods other than that of Job 4-H: in Job 6-H a .600 Morse taper by the use of the taper attachment, with only one trial allowed, and in 7-H two tapers with the compound rest. One was an internal taper of 30 degrees, the other an external taper of 45 degrees. Both methods were covered in the film, *Cutting a Taper with the Compound Rest and with the Taper Attachment*. Use of the compound rest is demonstrated in turning a steep taper as on a bevel gear, and the use of the taper attachment for slight tapers is also shown. Animation is used with a detailed discussion, to teach the correct methods for setting the compound rest at a given angle. Animation, and views of the actual operations show the setting of the taper attachment for cutting a taper of 1½ inches per foot. The film includes full directions for setting the tool, and for the use of both roughing and finishing tools; the bevel protractor is used to measure a steep taper, and a taper ring gage is used to measure a slight taper.

Advanced Shop

♦ Job 1-V required truing, facing and centering with dial indicator and steady rest. This project was acceptable only if the work did not run more than .002 inch eccentric. Motion picture demonstration was furnished by a portion of the film, *Height Gages and Standard Indicators*. Less than half its eleven-minute length was required. Use of standard indicators was given for checking the accuracy of layout, the flatness of a surface, and the centering of work. It is emphasized that care is required to maintain the accuracy of these tools.

Jobs 2a-V and 2b-V required turning left and right-hand V threads, six to the inch, with the usual tolerance of .0005 inch. Diameters were measured by the three-wire method. Much useful material for this job was found to be available in the film, *Cutting an Acme Thread*, which runs seventeen minutes.

Job 3-V required drilling and boring straight holes in 1½ inch stock, with each diameter .050 inch larger than the preceding. Five trials were required. Acceptability was judged by plug gage; tolerance .0005 inch. The film used, *Drilling, Boring, and Reaming Work Held in a Chuck*, demonstrates in eleven minutes skills rather more complex than required for Job 3-V; since it deals with taper holes, as cut in solid gear blanks. It shows centering the stock, rough facing, drilling, taper boring and reaming. Also demonstrated are the selection of the proper drill, the various methods of centering the drill in the work, setting the taper attachment for boring a tapered hole, use of the taper reamer for finishing the hole to size, checking the size with taper plug gage, and precautions to be observed in using such gages.

A third film not considered as special preparation for any job was shown in the advanced shop; namely, *The Vernier Scale*. It is similar to *The Steel Rule and The Micrometer*. All films were shown only to the experimental groups; none to control groups.

MEASURING FILM USEFULNESS

KEEPING THE TIME RECORDS

Since the efficacy of the motion picture film as an aid in training was to be judged primarily by the improved speed of turning out acceptable products, correct timekeeping was a vital part of the research. In this the instructors cooperated diligently. On each trainee's blueprint of the required project were blanks for entering his starting and finishing time to the nearest five minutes, and blanks for noting any "time off" for tool sharpening, breakdown of lathes, interruptions for lectures, and the like. These time records were inspected as carefully as were the actual pieces of lathe work.

A second time record was kept as a partial check on the students' individual records. Each class had a group time sheet for every day. On it also, each trainee entered his beginning and ending time, and "time off" periods. One student in each group was placed in charge of this record sheet and helped the instructor see to it that time was faithfully recorded.

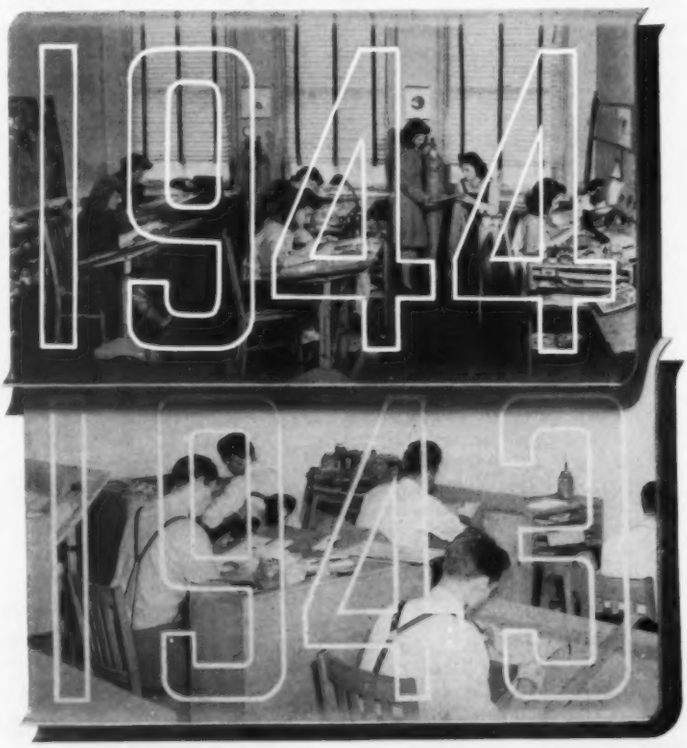
EQUATING OF GROUPS

As has been indicated previously, the difference in speed obtained, between the experimental and control groups, was computed on the basis of each individual's average performance, and not on the total number of parts turned out by the whole group trained with motion pictures as compared to those trained without. There was no need, therefore, to have exactly the same number of trainees in the two groups, at any time, in order to preserve accuracy.

However, the experimenter was determined to leave no stone unturned to control every discoverable factor, however slight, which might form a source of difference between the output rates scored by the experimental group of trainees and the rate scored by the control group, except of course the source being studied—that one group viewed the motion pictures while the other did not.

With this in view, such familiar data as age, sex, and previous education and experience, was gathered from each individual at the outset. Going further, each individual was subjected to a number of recognized aptitude tests. The scores in these tests, as well as age and years of education, were correlated with the time scores made by each individual on the lathe work itself; that is, with an over-all score based on the average time required by each trainee to complete each trial of

TRAINING BEGINS AT HOME!



A year ago the girls who now compose Springer Pictures' Art Department had never seen a training film—never heard of technical animation. Today, they have been trained to work quickly and accurately. Meeting problems like this at home broadens our perspective in the larger fields covered by our training films.

SPRINGER PICTURES, INC.

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MOTION PICTURES – ANIMATION – SLIDE FILMS

each job, which passed inspection.

The Equating Factors

Only a very slight correlation was found between the trainees' performance on lathe work and their ages, or their previous education, or even some of the approved aptitude tests; that is, these factors appeared to have little influence on the marks they attained in the lathe-work training course. On the other hand, a correlation of approximately .20 was found with the Purdue Test for Machinists and Machine Operators, and of .35 with the Purdue Industrial Training Classification.

Motor Ability Test

The highest correlation of all, .41, was found with a test of "motor ability" designed by the experimenter himself, following an idea which he gained from Clark L. Hull (*Aptitude Testing*, 1928, page 68). This test made use of a device constructed for the purpose, and illustrated later in this study.

A mechanical pencil was held vertically by a steel rod bolted into the tool post on the compound rest of an engine lathe. A drawing board was bolted in position on the ways of the lathe. By turning the two wheels on the compound rest it was possible to make the pencil follow around a two inch circle tacked on the drawing board. The student was instructed to "make the pencil follow around the circle in the shortest possible time without getting any farther from the circle than necessary," and the manner of turning the wheels so that the pencil would follow the circle was demonstrated. Each trainee's success in the test was scored by means of a piece of ground glass bearing concentric circles. That these scores went so far to predict the relative proficiency which would be demonstrated by these individuals in their lathe work training, strongly suggests that some such test might form a highly valuable aptitude-testing device if developed to precision standards.

Only the three factors mentioned were employed in equating the groups for the output-speed comparisons, though others were used also in equating for informational gain—a secondary object of inquiry, also reported on below. Actually, however, initial differences between averages of the two groups were very slight in any factor.

Film Technique

Any evaluation of a motion picture or series of them is equally an evaluation of a method of film utilization. Consequently the technique of film use employed will be described in some detail.

The specific methods of utilization of films varied from time to time in response to the many changing factors that appear in dealing with human beings. It is probably safe to say that no two film showings were exactly the same. There were, however, a number of general principles of film use that were followed throughout the experiment.

Integrated Film Use

Ideally, film lessons should be timed to come at the point in the student's progress at which they will be most helpful. Consequently, an effort was made to show a film on any given lathe operation just before the trainees were ready to start practicing that operation. Conversely, the class was never kept waiting for a film lesson when the members were ready to start applying it.

Naturally, there was a tendency for the film lessons to be timed less well for the very fastest or the slowest workers. The average, of course, set the learning pace. However, this difficulty could not occur at the beginning of a training period, and the fact that the six-weeks course was divided into three intervals prevented any serious difficulty in timing film lessons to suit the needs of all students.

It is difficult to place too much emphasis upon proper timing of film lessons. It has been noted that there is a strong temptation in many industrial plants to follow the administratively convenient plan of lumping large units of film lessons together. All too often "visual education" is accomplished by gathering together two or three hours' worth of training films and showing them to all personnel regardless of what machines they are operating and how much experience they have had. In the present research no film showing lasted more than twenty-five minutes.

* * *

Editor's Note: Part Two, completing our review of this study will be presented in the next issue of Business Screen.

* * *

Films on Office Practice

♦ Eight 16mm sound motion pictures on *Office Practice* produced by the armed forces are available at footage costs from Castle Films, Inc., official distributor. Subjects include typing, shorthand, office machines and transcription.

Show some ANIMATION!
Complicated things become easy to understand when they are explained with motion picture animation. Another reason why PHOTO & SOUND training films are speeding up training of thousands of industrial workers as much as 40%. The same record can be established in your industry.
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STEEL Motion Picture
FILM CANS and REELS
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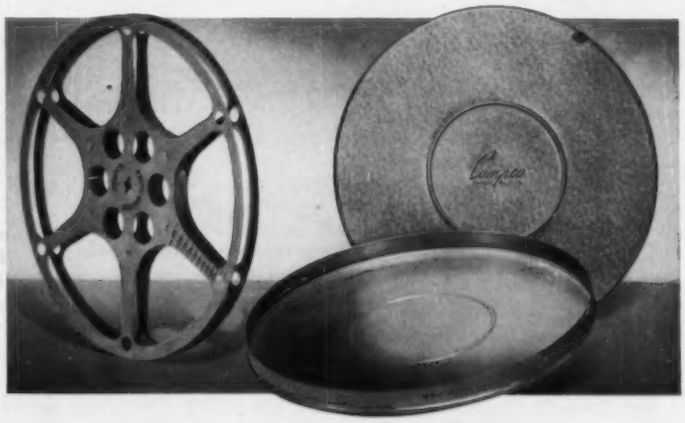
Don't accept substitutes when you can get *the very best* - - Compco STEEL Cans and Reels, available for immediate shipment in a complete range of sizes. Write today for catalog sheet and price list.

*Available on priority only, of course.



COMMERCIAL METAL PRODUCTS CO.
2253 West St. Paul Ave. CHICAGO, ILLINOIS

THE ARMY MAKES FILMSTRIPS

Self-critics, the staffmen of the film strip section at Fort Monmouth look at one of their finished products. They are proud of the high caliber of their work and look carefully for further improvements. Lt. M. I. Warshow points the stick to call attention of the men to one part of the frame.

MEET THE "air brush commandos" —that's what they call themselves. Officially they are known as the film strip section of the visual aids division of the department of training literature at Fort Monmouth and they are the guys who spice up training film strips so that learning becomes fun.

The film strip, which functions as a silent slide motion picture, is one of the army's most effective means of training men in technical and specialized duties. It is easy to learn from the film strip, which can be used practicably in the field and in the classroom. The film fits into a metal capsule which can be carried in a back pocket, and its projector folds into a case not much larger than a woman's handbag. A sheet, blanket or wall may be used as an improvised screen.

SHOWS 60 FRAMES

In projection, the film strip shows about sixty "frames." Each frame is designed to present a definite point for the soldier's benefit. Back of the film lies the work of numerous artists, photographers, writers and technical experts working together as a closely knit team.

After the subject to be portrayed on the film strip is selected, the artists go to work. They make layouts for each individual frame according to the specifications of the script, maintaining technical accuracy. After the layouts are approved by the supervising officer, Lt. Martin I. Warshow, they are turned over to the Signal Corps photographers, who shoot the pictures in the way the artists have conceived the ideas. All the camera work takes place in the vicinity of the post, but an impression of front line location is achieved. Live models, picked for their photogenic qualities, are used. They are enlisted men who understand the subject for which they are posing.

After the prints are made, they are turned back to the artists for retouching. In this work, they employ the air brush, an instrument requiring delicate skill. When the art work is finished, the product is more suitable for reproduction than the original photo. Often the artists change backgrounds in order to bring out more graphically the lessons represented on the original frames. They add cartoon figures and miniature cut-outs for humor and liveliness.

CHECKED FOR ACCURACY

The retouched pictures are checked again for complete technical correctness. They are then edited, cut or added to a la Hollywood. Then the film goes to Washington for final War Department approval. Printed on 35mm films, the production is earmarked with a series number and is released for distribution to the branches of the service for which they have been made.

Many new techniques are being employed and perfected by the men of the film strip section. Especially interesting and effective is their usage of three-dimensional photography. Art work, in this technique, becomes a necessary part of the composition.

The personnel of the art studio might well give Walt Disney's staff a few pointers. Heading the soldier artists is Sgt. Carlos Richmond, who in civilian life was a successful commercial artist. Sgt. Karl Gutberlet, now doing layouts for the film strip section, was also well known in the commercial art field. Sgt. Wilbert Avery Slack, chief photographer, was a top-flight photographer and winner of many contests before joining the army.

Gremlins — good and bad — are portrayed by small cartoon figures cut out of cardboard. The good ones typify efficient soldiers and the bad ones show the sad effects of indifference and improper procedure. They serve to inject life into otherwise unappealing technical facts. Most of the gremlins are conceived and produced by Cpl. Frank Antoncich.

The work of the Signal Corps officers and men in the film strip section helps to increase the efficiency of specialized soldiers throughout the army. Their amusing and educational pictures may be flashed on the screen in classrooms or near the battlefields where fighting technicians pause to study the intricacies of a new piece of equipment.

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Cordially yours,

January, 1944. The Editorial Staff.

P. S. Recent Sarra-produced visuals are serving in fields of safety education, employee relations, supervisory training, and other wartime problems of management.

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The Old Army Game

♦ VISUAL AIDS are constantly gaining greater recognition, but occasionally there is a miscue in it somewhere. Take the case reported by YANK, the Army Weekly. During a severe rainstorm one night recently at Camp Davis, N. C., the AAA School's Visual Aid Department got this phone call: "Something has happened to my windshield wiper and I can't see a thing due to the rain. What should I do to aid my vision?"

* * *

♦ A complete list of Motion and Time Study Films especially useful to war industry is available from the Industrial Engineering Film Library, the University of Iowa, Iowa City.

THREE-DIMENSION LEARNING

MILITARY navigation students are now being trained by a new technique which teaches them more quickly than ever before to steer by the stars. The new technique eliminates the need for training students to interpret depth in flat charts and diagrams by presenting life-like pictures of models of the heavens and the earth in three dimensions. Recently perfected by Professor John T. Rule, Chairman of the Section of Graphics at the Massachusetts Institute of Technology, the speedup technique is made possible by Polaroid three-dimensional pictures known as vectographs, it was revealed publicly this month for the first time.

Real Life Dimension

Prepared as slides for projection by standard projectors on a classroom screen, the vectographs are so strikingly realistic that an instructor walking into the beam of a projected vectograph of the earth appears actually to be walking into the center of the earth. Students feel they are looking at precise wire models of the heavens with relative positions of the stars and the earth immediately apparent.

Replaces Older Methods

Before this new three-dimensional technique was introduced, instructors customarily attempted to teach students to read depth into chalk drawings on a flat blackboard. Many students, however, were unable to master this essential part of the training, and were unable to become navigators for this reason. With the new three-dimensional technique in use, it is no longer essential for a navigation student to possess the ability to read depth into a drawing on a flat blackboard because the depth element actually is present in the three-dimensional picture.

The technique of preparing three-dimensional projection slides of the heavens is similar to the geometry instruction technique developed by Professor Rule in 1934. At that time, he was one of the first college instructors in the country to utilize three-dimensional projected pictures for teaching geometry. According to Professor Rule, celestial navigation vectographs "teach students, easily, to see and think three-dimensionally. Everything else being equal, a student trained with celestial navigation vectographs is bound to learn more readily about navigation than one trained only with the aid of ordinary flat diagrams."

In the old days, a stereoscope was the only practical three-dimensional viewing device. Its complicated optical system permitted only one person at a time to view a picture in three dimensions. A three-dimensional vectograph, however, can be viewed even by a large group of people simultaneously. For example, a navigation instructor can now project a vectograph slide of the Zenith of Greenwich on a screen and know that those in the back row of the classroom can actually see its precise position in the universe.

Invention of Edwin Land

The vectograph process is the invention of Edwin H. Land, President of Polaroid Corporation, and Joseph Mahler. A three-dimensional vectograph is a specially treated plastic sheet. On it, two pictures occupy the same space at the same time. Polarizing three-dimensional viewers unscramble the superimposed pictures to recreate the normal condition of effortless three-dimensional seeing.

M. I. T. Professor John T. Rule examines globe which serves as a photographic model for three-dimensional pictures which he uses in new technique to speed up the training of military navigation students. Already adopted to teach students more quickly than ever before to steer by the stars, the speedup technique is made possible by Polaroid three-dimensional pictures known as vectographs. An instructor walking into the beam of a three-dimensional vectograph of this globe projected on a screen appears actually to be walking into the center of the earth itself.

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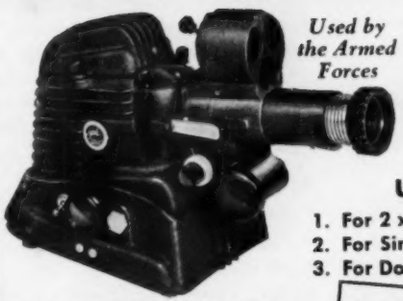

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NEWS OF THE ASSOCIATIONS

THE ASSEMBLING OF those, who by experience and other qualifications hold true positions of leadership in the visual industry follows the three-fold pattern of the film medium, notably: *Production* (of motion pictures and slidefilms); *Projection* (the manufacture of visual equipment and essential accessories) and *Distribution* (the sales and service outlets of the industry).

During 1943, the organization of these branches of the visual industry proceeded with satisfying initial results. The wartime problems of the film producer and the equipment manufacturer required a sharing of experience and a common understanding of wartime problems. The visual dealer, hard hit by wartime drains on stock and personnel, served the nation well in the distribution of government training and informational subjects, maintained and serviced existing equipment and benefited by special dispensation granted this essential medium by the War Production Board.

AN INTERDEPENDENT INDUSTRY

Film production depends on the quality and quantity of available projection equipment; the projector manufacturer sells to the company or school who possesses an adequate supply of films. The dealer's livelihood depends on the efforts of both of these basic suppliers and on his specialized experience in this wholly specialized field. In 1943 the real knowledge of this inter-dependence was a basic factor in organization.

Further realization that the visual medium and those who serve it are a world apart from the photographic industry which serves the amateur was not so clearly understood. The special WPB orders providing for sale of visual equipment to essential outlets such as war plants, training schools, institutions and government agencies was badly interpreted by the retail photographic field. The hope of something to sell after months of depleted stocks was encouraged by press misinterpretation to an unfortunate degree since not one-quarter of the retail photographic dealers had either the stock or the experience to serve these limited "essential" outlets. Although the potential sales field was fairly generous, equipment supply was actually very limited and, by right of experience and specialization, was the rightful province of the visual dealer specializing in such service.

Visual Equipment Companies Studying Industry Organization

♦ A special committee selected at the Visual Industry Forum held in Chicago last November is preparing a fairly comprehensive study of the aims and objectives of this branch of the visual field for presentation to another combined meeting of the industry, scheduled for January.

Companies active in this program include the experienced and specializing firms who provide by far the major part of the 16mm sound motion picture projectors, filmstrip equipment and projection screens for educational and industrial use.

Regional Meeting of Film Producers in Chicago Soon

♦ The National Association of Film Producers (for Education and Industry) now comprising nearly thirty companies specializing in this field, will hold a regional meeting of the midwestern membership in Chicago the third week in January.

A program of activities for the coming year has been prepared for review by this regional group and will be submitted simultaneously to other regional meetings of Eastern and Pacific Coast groups. A national meeting of the entire membership has been postponed in the interest of wartime travel restriction and because a great majority of the member companies and their executives are engaged in the most extensive war film production programs ever undertaken.

Visual Education Dealers Also Plan Chicago Meeting

♦ Officers and members of the National Association of Visual Education Dealers plan to meet in Chicago on or about January 10 at the Morrison Hotel, according to advices received from D. T. Davis, Secretary-Treasurer of NAVED.

NAVED is now represented in forty-one states, Hawaii and Canada through its membership of one hundred and fifty-seven voting, associate and advisory members. J. M. Stackhouse was recently reelected president and Merriman Holtz is vice-president. R. F. O'Neil, Bernard Cousino, Milton Hill, and Earl Carpenter, were reelected members of the Board of Directors.

Paul Brand, Washington, J. E. Foss, Pittsburgh, and Jasper Ewing, Baton Rouge are new members of the NAVED Board.

Agfa Ansco Changes Name to Ansco

★ America's oldest manufacturer of photographic materials has changed its name from Agfa Ansco to Ansco. This announcement was made jointly by George W. Burpee, President of General Aniline & Film Corp., the parent organization, and G. Harrison Echols, Ansco's General Manager. The change in the company's name became effective January 1.

The name change is the final step in a planned reorganization of the company which began when its ownership and management were assumed by the United States Government shortly after America entered the present war.

In recognition of the fact that the organization is not associated in any way with any other company whose products carry the name "Agfa", it was decided to revert to the name "Ansco", by which the company was known for many years.

Ansco was founded in New York City more than one hundred years ago by Edward Anthony. In 1902 the Anthony organization was combined with the photographic division of the famous Scovill Mfg. Co.

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Sight & Sound

(CONTINUED FROM PAGE TWELVE)

industries, too, but training aids were on the way up in executive recognition there.

This was and remains 1943. The real fight is still ahead. We sparred successfully through the opening rounds of the war after a bad start through a sneak punch by the Jap. Now, in the war, as in the field of visuals, we are going to prove that we had real stuff inside.

It goes without saying that all of us realize that not only the test of battle but the hopes and ambitions of the great future of the visual medium lie just ahead in 1944. This is our year of challenge and opportunity. *Let us go forward to meet it.*—OHC.

A NATIONAL DIRECTORY OF VISUAL DEALERS

These qualified visual education dealers stand ready to provide products and services required for your film program—in industry or education. A majority of these companies also provide projection service for local and regional showings, equipment repair and maintenance, film rentals (industrial, educational and entertainment subjects) as well as the film productions of the armed forces and U. S. Government agencies, including the U. S. Office of Education. Your visual education specialist can help—whatever the visual problem!

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MASSACHUSETTS

Visual Education Service, Inc., 131 Clarendon St., Boston 16, Mass.

NEW HAMPSHIRE

A. H. Rice and Co., Hollis, N. H.

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Buchan Pictures, 79 Allen St., Buffalo, N. Y.

King Cole's Sound Service, 203 E. 26th St., New York City.

John E. Allen, Inc., Box 383, Rochester 7, N. Y.

PENNSYLVANIA

Kunz Motion Picture Service, 1319 Vine St., Philadelphia, Pa.

SOUTHERN STATES

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The Distributor's Group, Inc., 756 W. Peachtree St., N.W., Atlanta, Ga.

LOUISIANA

Jasper Ewing & Sons, P. O. Box 1023, Baton Rouge, La.

NORTH CAROLINA

National Film Service, 14 Glenwood Ave., Raleigh, N. C.

TENNESSEE

Frank L. Rouser, P. O. Box 2107, Knoxville 11, Tenn.

VIRGINIA

National Film Service, 309 E. Main St., Richmond, Va.

MIDWESTERN STATES

IOWA

Pratt Sound Film Service, 805 Third Avenue, S.E., Cedar Rapids, Ia.

KANSAS-MISSOURI

Kansas City Sound Service Co., 926 McGee St., Kansas City, Mo.

KENTUCKY

D. T. Davis Co., 231 W. Short St., Lexington, Ky. (Also Louisville, Ky.)

MICHIGAN

Cosmopolitan Films, 3248 Gratiot Ave., Detroit 7, Mich.

W. D. Engleman Co., 701 W. Warren Ave., Detroit, Mich.

MINNESOTA

Film Preview, 1504 Hennepin Ave., Minneapolis, Minn.

OHIO

Ralph V. Haile & Associates, 215 Walnut St., Cincinnati, Ohio.

Twyman Films, Inc., 29 Central Ave., Dayton 1, Ohio.

Cousino Visual Education Service, 1221 Madison Ave., Toledo 2, Ohio.

WISCONSIN

Photoart House, 844 N. Plankinton Ave., Milwaukee, Wisc.

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Carroll W. Rice, 19 Estrella Ave., Piedmont, Oakland 11, Calif.

Photo & Sound, Inc., 153 Kearny St., San Francisco, Calif.

Herbert M. Elkins, 10116 Ora Vista Ave., Sunland, Calif.

OREGON

Moore's Motion Picture Service, 306 S. W. 9th Ave., Portland, Ore.

WASHINGTON

Rarig Motion Picture Company, 5514 University Way, Seattle 5, Wash.

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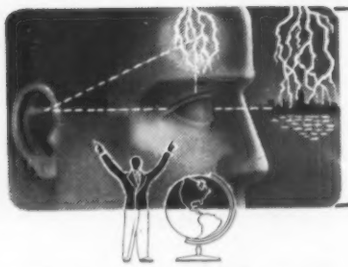

CAMERA EYE

A PAGE OF EDITORIAL COMMENT AND REVIEW

ACQUISITION OF ERPI Classroom Films Inc., from Western Electric Company by Encyclopaedia Britannica Inc., was announced December 3rd by William Benton, chairman of the board of Britannica, and vice-president of the University of Chicago, to which the 175-year old publishing organization was given last January by Sears Roebuck & Company. Included in the transfer are the negatives and prints of Erpi's complete production of over 200 educational subjects in sixteen fields of knowledge.

EXECUTIVE PERSONNEL UNCHANGED

The policy and personnel of Erpi Films, of which E. E. Shumaker is president and chief executive officer, will continue unchanged under Britannica's ownership, Mr. Benton said. Selling policies will remain as in the past, with sales of the classroom films being handled through the sales organization under the direction of H. C. Grubbs, vice-president.

"The management and personnel of Erpi Classroom Films are very happy to become identified with the Encyclopaedia Britannica and the University of Chicago, for we feel this association will enable us to make an even greater contribution to education than in the past," Mr. Shumaker said yesterday.

BRITANNICA FACILITIES NOTED

In announcing the acquisition of Erpi Films, Mr. Benton said: "Last January, when Sears Roebuck & Company made the gift of Encyclopaedia Britannica Inc., the University welcomed it not only because of the world-wide importance of the Encyclopaedia Britannica itself, but also because the Britannica organization offered facilities for extending the University's educational ventures in other fields.

"The purchase of Erpi Films is a natural and logical phase of this extension of Britannica as an educational organization allied to the University. The University recognized the importance of educational sound films in 1932 by entering into a contract with Erpi Films, and approximately forty films have since been made in collaboration with members of the faculty. This new relationship will enable the University to use its resources and knowledge to develop an educational tool which expands the range of material available to the teacher as no other device can do."

IN ACCORDANCE WITH BELL POLICY

Sale of Erpi Films to Britannica is in accord with Bell System policy, C. C. Stoll, president of the Western Electric Company, of which Erpi Films has been a subsidiary, said yesterday.

"Erpi Classroom Films," he said, "was organized in 1929 for the purpose of developing the utility as a media in educational processes of the new form of communication, the sound motion picture, which had been perfected by the Bell Telephone Laboratories and successfully employed on a large scale by the entertainment industry.

"In the intervening years the Company has carried forward the development of techniques for making and using sound pictures as an aid to education and has accumulated a large library of films for classroom instruction which are now in wide use.

"The effectiveness of the new media having been successfully demonstrated, it now becomes possible for the Western Electric Company to carry out its original intention of transferring this activity to an institution closely identified with the educational field. This has been accomplished through the sale of Erpi Classroom Films to the Encyclopaedia Britannica, which, through its affiliation with the University of Chicago, will make possible the full development of the activity under ideal educational auspices."

NEW DIRECTORATE NAMED

The board of directors for Erpi Classroom Films Inc. will be the board of Encyclopaedia Britannica Inc. with the addition of Mr. Shumaker, who also will go on the board of Encyclopaedia Britannica Inc. The two boards will consist of Mr. Benton, chairman, E. H. Powell, president of Britannica, Robert M. Hutchins, Paul G. Hoffman, Henry Luce, M. Lincoln Schuster, Mr. Shumaker, and John Stuart.

The Erpi Films' library, which is being extensively used in classrooms throughout the United States and in many foreign countries, embraces the fields of American history, animal life, art, astronomy, athletics, chemistry, child growth and development, geography, geology, human biology, music, physics, plant life, natural and social sciences, social studies, and teacher training.

Dowling Joins Tradefilms

♦ Pat Dowling, industrial film producer, has joined the staff of Tradefilms, Inc., the producing organization headed by Shirley C. Burden.

Dowling comes from Douglas Aircraft Company, where he was managing production of training and public relation sound films. He was formerly an independent producer in Hollywood for the last 15 years.

In Support of Learning

♦ How adequate schools, adequately equipped, and better paid teachers bring a dollar and cents return to community, state and nation, is the theme of a new sound motion picture, *Where Dollars Make Sense.* Production of this motion picture has been assigned to The Jam Handy Organization, Detroit, by its sponsors — the National School Service Institute.

Upon completion, prints or copies in 16 mm. will be made available for showings before special groups, including PTA, business men's and business women's clubs and organizations, tax-payers, and civic groups. The picture dramatizes the new and growing needs of schools to provide the kind of education the community must have to meet the new demands inevitable in the postwar world.

Marines Break Tradition

♦ Women Marines, being trained to release men Marines in most types of noncombatant jobs in the United States, are entering another field—that of sound picture projectionists.

The first woman Marine assigned to this new field, Private First Class Lavonne Laura Stoneback, 21, Madison, South Dakota, has reported for training at the Navy Yard, New York, New York.

Eventually, some 75 women will be trained as projectionists and will be assigned generally at Marine posts and stations. Upon completing the 8-week course at the New York school, Private First Class Stoneback will be assigned at Marine Corps Headquarters, Washington, D. C.

The training course includes the physics of sound and light, a study of generators, condensers, motors and transformers, the care, upkeep and adjustment of projectors, and an intensive study of sound track, synchronization, photo tubes, photo call transformers, static characteristics, amplification factors, and the theory of the beam power tube.

Upon completion of this course, women Marines will be thoroughly equipped to operate and make minor repairs and adjustments on sound motion picture equipment, repair faulty sections of film, and clean and oil equipment. They will be rated as qualified operators of Navy motion picture equipment.

A Picture We Needed

♦ *Points for Pedalers,* a new sound motion picture designed to help more than 12,000,000 American cyclists to get greater pleasure and mileage from their bicycles, has just been produced and released by the Aetna Life Affiliated Companies of Hartford, Conn.

Approved by the Bicycle Institute of America, the picture shows the vital part that bicycles are playing in relieving wartime transportation problems but warns that unless bicycles are maintained and handled properly, accidents will occur.

Strict observance of traffic rules is just as important to cycling as it is to safe driving or walking, and *Points for Pedalers* shows specific safe-cycling pictures, including proper hand signals, control of bicycles in slow traffic and methods of crossing busy intersections. The film also stresses the importance of keeping bicycles in good mechanical condition and demonstrates a practical test of cycling ability.

Points for Pedalers, which runs approximately 11 minutes, may be borrowed without charge for showings to schools, PTA clubs, civilian defense and other groups.

The "*PERISCOPE*" of the Mind

Official U. S. Navy Photograph

NATURE has endowed Man with two effective methods of acquiring knowledge: through the ear; and through the *eye*—the "periscope" of the mind.

Just as travel, the art of *seeing* things—and not merely *reading* or *hearing* about them—makes the most *lasting* mental impressions, so does the *visual* method of teaching register quickest on the human brain, and normally *lasts longest.*

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To Each Other*

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Now the United States Steel Corporation has made another contribution to perfection in the field of alloys—this time in the alloy of mettles as well as metals.

Vividly concrete and specific, but strongly inspirational and emotional, is the stimulating sound motion picture "To Each Other" being put before men of metal and other men of mettle throughout the nation.

We are proud to have been selected by the United States Steel Corporation for a part in this contribution on which we have worked under their command.

*A sound motion picture production

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